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CCJ COMMERCIAL CAR JOURNAL

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JOURNAL

CCJ READER DIGEST

The Great Highway Robbery . . . Or Is It?

U. S. Chamber of Commerce Highway Transportation Specialist Henry K. Evans takes a searching look at whether or not the federal government should pay out in highway aid what it takes in from highway users . . . Since World War I, it has collected $17.2 billion in excise and gasoline taxes, has paid out only about $6 billion in highway aid . . . Page 64.

4 Star Safety Program McLean Style

Marcus A. Dow Memorial Award winning Fleet Safety Director Carlton Alexander outlines his fleet's safety program . . . It includes accident investigation and analysis, removal of factors contributing to accidents, creating a desire in drivers to drive defensively, and removal of subjective factors contributing to accidents . . . Page 66.

Determining Unsafe Drivers—Before the Accident

Dr. Harold Brandaleone, medical director, Third Avenue Transit System and United Parcel Service, New York City, shows how he took a tip from the U. S. Air Force in an attempt to determine accident-prone drivers before they have an accident . . . His "Profile" chart is designed to disclose conditions that might lead to an accident in the future . . . Page 68.

How Long Should Trucks Run?

This new approach to the old problem was made by Howard Willet, Jr., at the recent SAE International West Coast Meeting . . . In it, he suggests that two, three or 10 years old, vehicle operating costs remain about the same, points a way to operating economy by synchronizing of maintenance, sale and purchase of vehicles . . . Page 72.

When It Gets Cold, Consider an Engine Heater

Generally less costly than inside storage, the right kind correctly used increases starting efficiency, reduces maintenance costs, saves time . . . Here is a roundup of what is on today's market to help fleetmen decide what is best model for their use . . . It includes a five point review of cold weather maintenance problems . . . Page 78.

Everybody Knows the PM Score

William T. Royston, Springfield shop superintendent, tells how king-size blackboards and mileage life expectancy for parts change and servicing controls preventative maintenance for Campbell 66 Express's fleet . . . 18 spaces on the 15 by 30 ft board guide what work is to be done when tractors show up on lot . . . Page 84.

To a fleet maintenance chief who has to "keep 'em rolling"!

Here's Hygrade's pump with the "never-say-die" diaphragm

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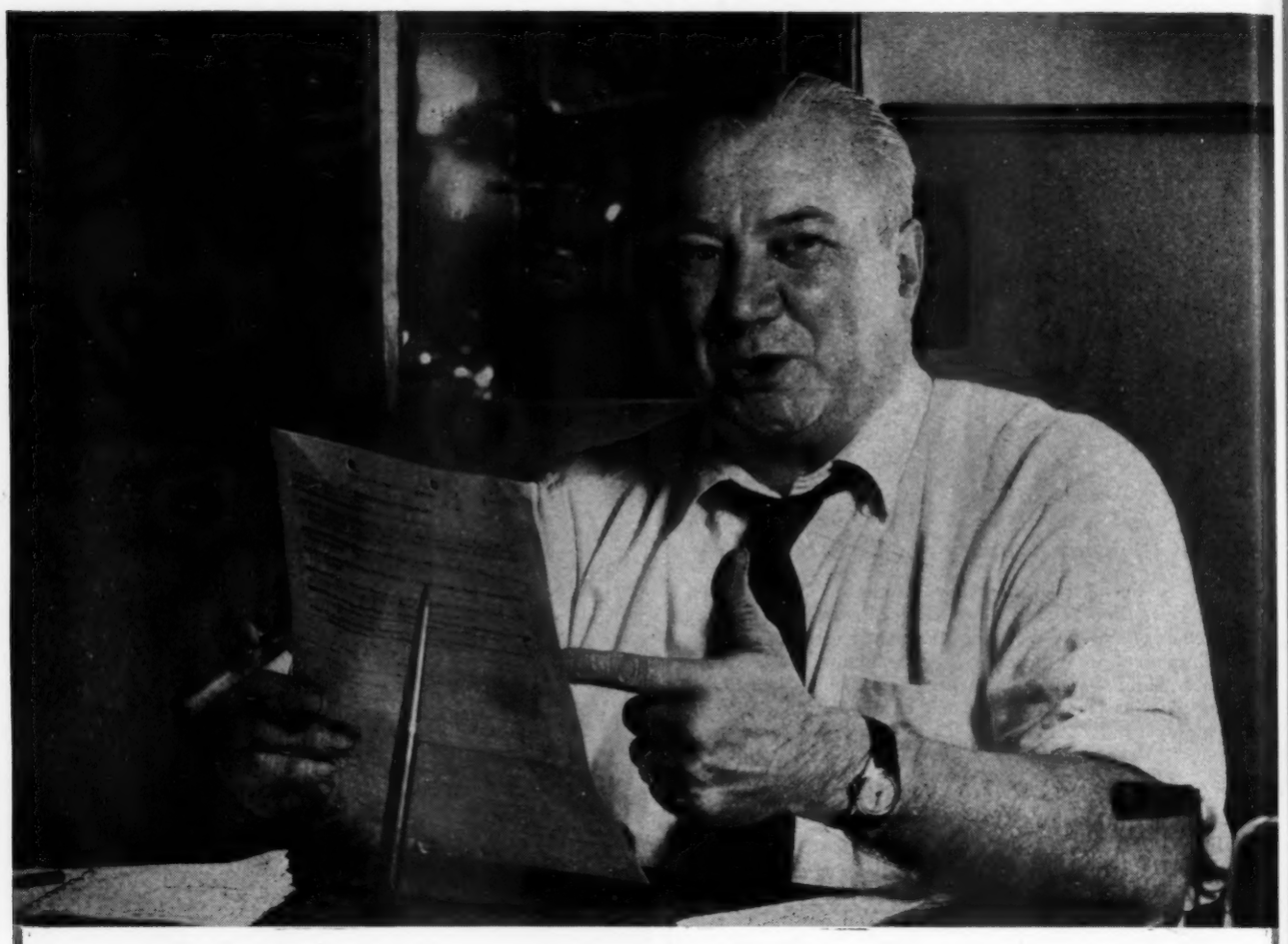

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The OVERLOAD

EDITORIAL COMMENT

Regulation by Competitors or In the Public Interest

WHILE the hot war in Korea has been cooling off, the cold war in Pennsylvania between the truckers and the railroads has been growing hotter. It is fast becoming a national battleground where interests on both sides have been throwing in reinforcements from further and further afield. While the targets are all in Pennsylvania at the moment, the outcome of the battle can affect the industry nation wide; just as surely as the ton-mile victory in New York bolstered the enemy in far flung corners.

Pennsylvania, although third largest state in numbers of trucks, is shackled with weight regulations at the bottom of the heap—45,000 lb for a tractor and tandem semi, and second only to Kentucky (42,000 lb). Why?

Because this weight is logical or in the public interest? No! Every surrounding state has higher weight limits. And in Pennsylvania itself five axles can carry 62,000 lb provided it's a truck and full-trailer. But as a more practical tractor semi-rig the same five axles can carry but 45,000 lb. On top of that, individual axle weights are relatively high. So the smoke screen of highway damage—the only real excuse for any weight limitation—has nothing to do with the issue.

Clearly and simply it is regulation through the influence of powerful competitors; a battle solely between the truckers and the railroads. But the public plays its part too. For the battle lines are not simply drawn between the opposing elements. Because legislators are elected by the public the fight centers on molding public opinion—for or against the trucks.

In this connection a brief summation of the opposing forces is interesting. On one side is the Pennsylvania Motor Truck Assn.—probably the biggest, best and most representative state truck association in the nation. But it is just 25 years old, has about 4000 members out of a potential of nearly 300,000 truck owners in the state.

On the other side is the Eastern Railroads Presidents Conference. It represents an industry 100 years old, comprises 31 members against a potential of 31 companies. It is dominated in Pennsylvania by the world's largest and one of its oldest railroads.

When it comes to winning friends and influencing people, the cards are obviously stacked with royal flushes. But as P. T. Barnum so aptly put it, you can't fool all of the people all of the time. Gradually they are beginning to see the light.

Early depositions in the now famous truck-rail suit have helped. Confronted with concrete evidence of some of their tactics to influence public opinion, the railroads for the first time are on the defensive. But the defense is ingenious. Already paid advertisements headed "Competition by Lawsuit" are being aimed at editors and publishers throughout the nation. Innocently they deplore the truckers' tactics; say nothing of the tripled railway guard on Capitol Hill. Sharply they exploit the divide and conquer theory—with the old saw that 95 per cent of the trucks are friends (because they happen to have the right axle distribution or happen to be immune to adverse regulation at the moment).

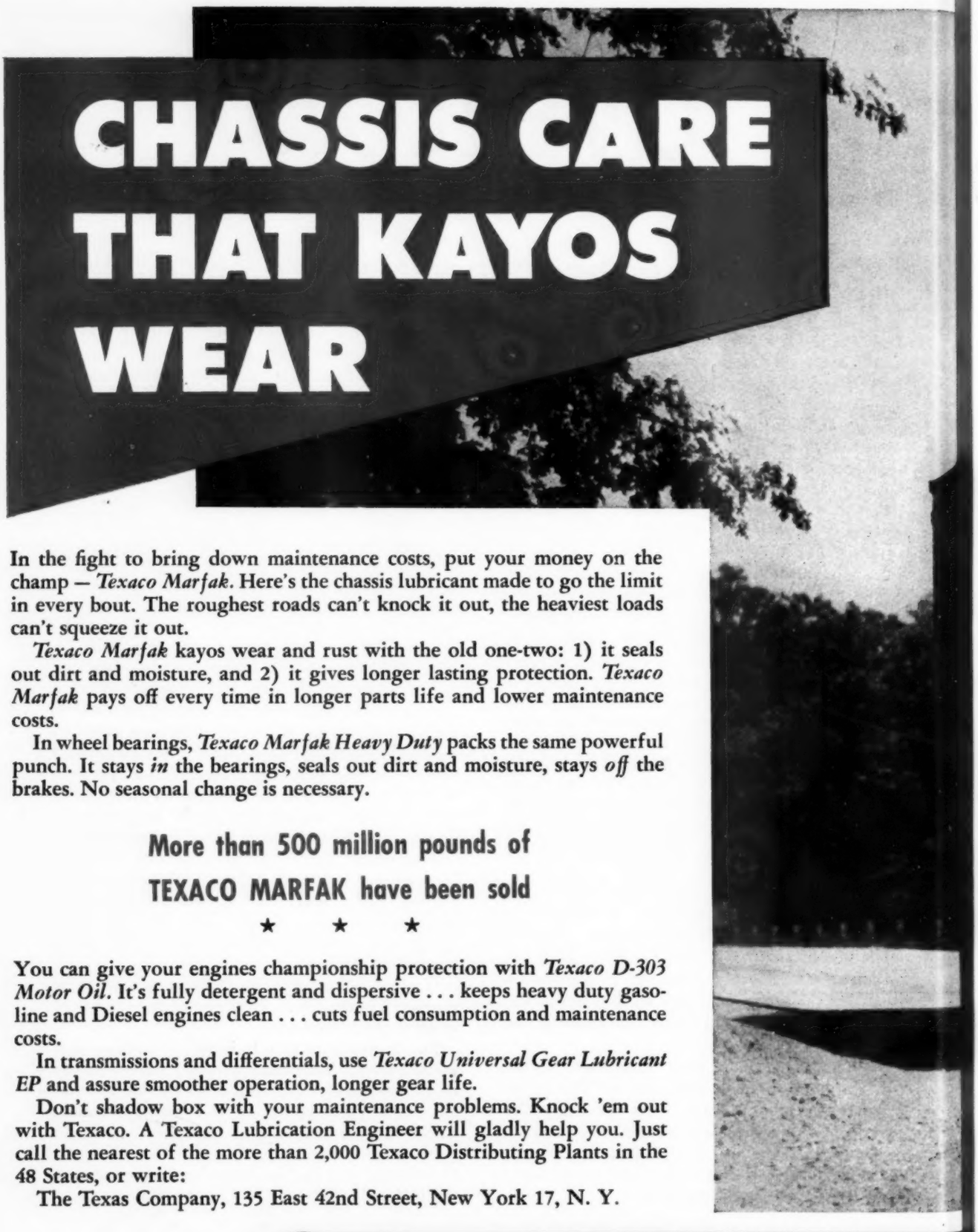
Incidentally, that is the gimmick that lulled the local truckers into sleep in New York two years ago for they had a specific exemption—were immune to the ton mile tax. But the next year they woke up too late when the immunity was knocked out by a stroke of the pen.

Obviously the battle in Pennsylvania must be continued in the courts, in the legislature and most of all at the grass roots.

For in the long run it is public opinion that really counts. True facts, properly presented, can change public opinion. But to do the job requires the active participation of every man operating trucks in Pennsylvania and the active support of every truck owner in the United States. For this time it may well be "as Pennsylvania goes so goes the nation."

Bart Rawson
Editor

CHASSIS CARE THAT KAYOS WEAR



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TIMELY NOTES ON MAINTENANCE AND OPERATION

by **MURRAY SIMKINS** Managing Editor

Transportation Conference

A TRANSPORTATION Conference sponsored by Ethyl Corp. in New York City recently brought together some well-known engineers with plenty to say on fuels and trucks and transportation. Here are some highlights excerpted from papers presented to the commercial fleet operators.

LP Gas as a Motor Fuel

By John S. Wintringham, Ethyl Corp.

IN COMPARING diesel fuel with gasoline, the diesel fuel is favored by lower cost per gallon, and by better economy of use in an engine or vehicle. The diesel fuel, however, requires a larger, heavier, and more expensive engine for the same power output. It has been estimated that a truck must operate in excess of 40 or 50 thousand miles per year for the diesel to be economically able to do better than gasoline, because of greater first coat and some loss in payload.

In a comparison of liquified petroleum gas and gasoline, LPG is favored by its high octane rating, which permits use of more economical, higher compression ratios, by the better mixture distribution in the engine because the LPG is completely vaporized, and by the lower cost of LPG. The latter item varies widely, however, in various parts of this country. LPG suffers in comparison with gasoline with respect to heating value per gallon, in cost of the fuel system on an engine, in cost of storage for the fuel, and in respect to safe handling. Where vehicles using LPG are to be stored and serviced indoors, more than usual ventilation is required to avoid danger from leaks.

LPG contains 27 per cent less heat per gallon than gasoline, and diesel fuel 10 per cent more. The high octane rating of LPG, particularly if it is largely propane, permits the use of higher compression ratios with LPG than with motor gasolines, and the over-all fuel economy in miles per gallon may be only 10 per cent poorer than gasoline. The high heat content of diesel fuel and the high compression ratios used result in diesel fuel economies up to 30 per cent better in miles per gallon than gasolines in bus and truck service.

Commercial LPG may be a mixture of propane, propylene, butanes, and butylenes. Butane has a vapor pressure low enough to be used for seasonal adjustment of vapor pressure in gasoline, but propane is too volatile. Because of demand for butane for use in gasoline, therefore, commercial LPG varies in composition with season, geographical location, and refinery practices. On the average it is largely propane and propylene.

The high vapor pressure of LPG requires pressure tanks for storage and use. Special fittings are required for transfer of LPG from stock tanks to vehicle tanks. A heat exchanger and pressure-reducing system are required to provide gas for mixing with the engine inlet air.

CR and the Modern Engine

By Max Roensch, Ethyl Corp.

THERE is a difference in compression ratio between the passenger car and the commercial vehicles. There are a number of reasons for this. One being that about one-half of the passenger cars use premium gasolines of higher anti-knock quality, second, the passenger cars operate 85 per cent of the time at part throttle with low octane requirement and trucks operate 85 per cent of the time at full throttle where their octane requirement is high, and third, generally speaking, the cylinder bores are larger in commercial engines, which means that for a given level of antiknock quality a lower compression ratio is necessary.

Diesel engines respond to increased compression ratios with the economical limit somewhere around 18:1. Most present-day engines operate in the range of from 14 to 18:1 so that most of the improvement in economy must come from more efficient combustion of the fuel.

In order that we may all have a clear understanding of the relationship between power output and economy, I would like to present briefly some of the work we have done on experimental engines on compression ratios ranging from 6:1 to 12:1. These data show that the power is increased in proportion to the compression ratio and that the brake specific fuel consumption is reduced proportionately so that the engine efficiency increases about in line with expectations over the range studied.

The brake thermal efficiency is improved uniformly over the range studied from 26 per cent at 6:1 to 32 per cent at 12:1. The brake horsepower at 3200 is also increased and fuel consumption decreased.

The improvement in brake mean effective pressure at the speed of maximum torque also responds to the changes in the compression ratio. From this data you

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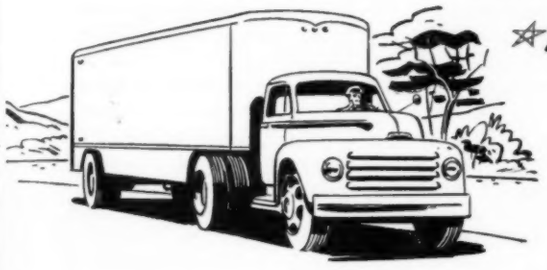

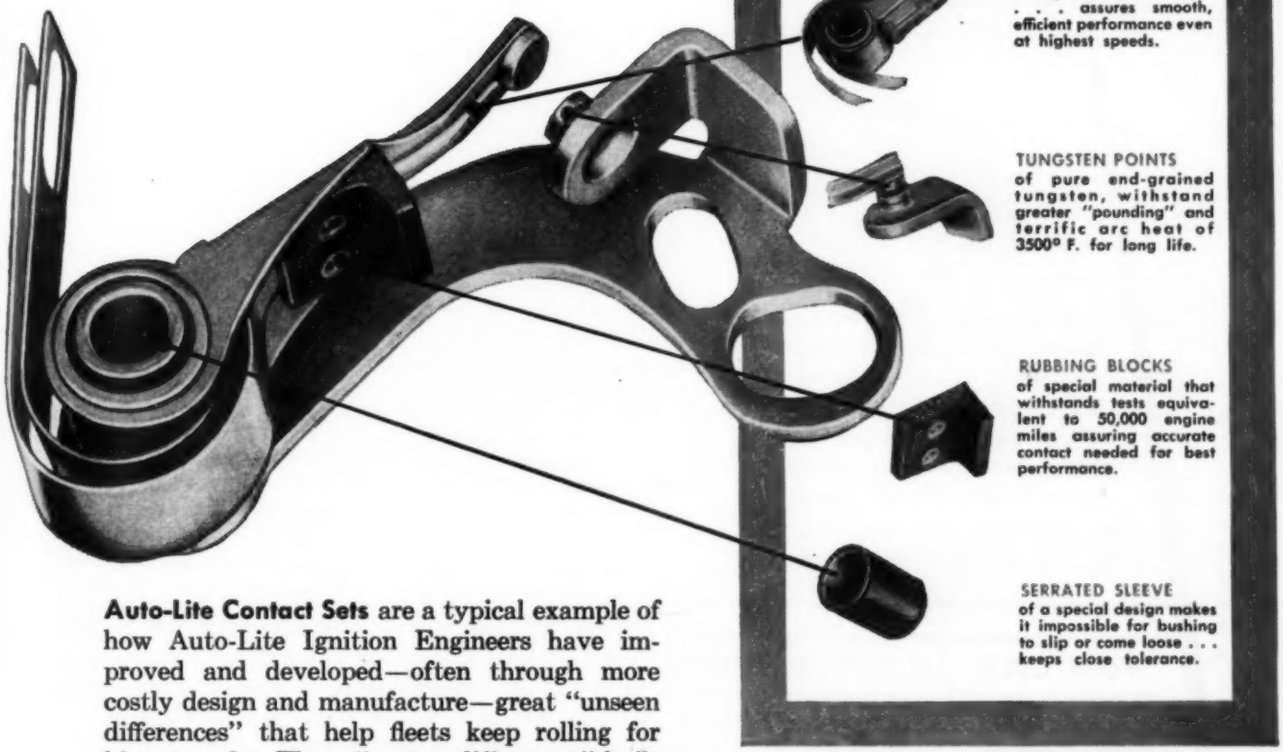

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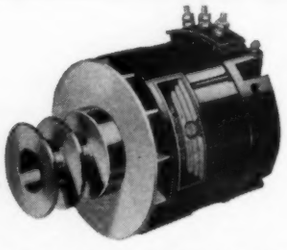

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Continued from Page 9

can predict the potential gains that are available from increased compression ratio. It is our belief that as knowledge on combustion chamber configuration and fuels continue to progress, octane requirement at a given compression ratio will be reduced. Compression ratio is just as important for maximum efficiency as far as LPG is concerned, or in a diesel engine. Since the antiknock quality of commercial propane is already known, the maximum compression ratio that can be obtained with this material can be readily determined on a given engine design, and the future development in that direction is limited by the ingenuity of the engineer responsible for refining the engine design.

Seating of Piston Rings

By A. M. Brenneke & Karl H. Effman
Perfect Circle Corp.

EXISTING literature throws as little light or as much confusion on the subject of piston ring performance as it does on other factors. While engine, size, type and design detail produce wide variations in performance, an overall pattern is visible if the observation point is not too close to the field.

The first thing that rings must do is run-in or seat. Blow-by is seldom considered, but oil consumption is the prime indicator of run-in. While the effect of run-in is familiar to all, the process is one of the least understood aspects of piston ring behavior. As the popular term "wear in" suggests, it is usually taken for granted that it is just a matter of wearing off of the inaccuracies of the new rings until they fit the cylinder. Run-in time has been reduced slightly as we have learned to make more accurate rings, but even with elaborate research methods of ring finishing we can't duplicate what the engine does. Incidentally, the process of "running-in" is accomplished with almost no measurable wear and does not require wearing off all the tool marks as is often popularly supposed. Analysis of what goes on in the engine makes further improvement in accuracy of the ring appear futile. How can we expect piston rings which we know rotate on the pistons to wear to fit cylinders which we know have different characteristics of unroundness at every level of their length from top to bottom?

Specific blow-by rates vary greatly with engine design. An interesting point in this connection is that cylinder distortion or inaccuracy has no appreciable influence on blow-by. Engine rpm seems to be the most critical factor. Blow-by at hp peak for a given engine can be roughly predicted by the following empirical formula:

$$\frac{\text{rpm at hp peak} \times \text{cu in.}}{1{,}000{,}000} = \text{cfm}$$

Oil consumption can be predicted with somewhat more confidence than blow-by if we think in the com-

(TURN TO PAGE 14, PLEASE)

EXCESSIVE RUBBING AND CUTTING ENDED

Lee Know-How Did It!

Here's an unusual story which doesn't involve tire design but which typifies the all-round know-how Lee men bring to solve fleet problems.

PROBLEM	RECOMMENDATIONS	RESULTS
1. Extra-wide, heavy duty rear springs rubbed inside tires on dual wheels of tractor **2. Casings were being cut and ruined while much of original tread remained** ***Operation***—Hauling fuel oil, kerosene and gasoline in Eastern Pennsylvania and New Jersey ***Equipment***—Tractors and semitrailers ***Axle Loads***—Legal limit ***Speed***—Normal ***Roads***—Highways and city streets ***Tires Used***—11:00-24 tires on cast steel wheels and individual rims ***Average Mileage***—Low, because tires were being cut	Lee first recommended checking mechanical condition. When wheels were perfectly aligned, the tires did not rub. However, when normal looseness or play developed, the rear end moved just enough to chafe the wall of the tires. ***Because*** the extra-wide springs were necessary for load carrying capacity and reduction of sway, Lee recommended moving tire and rim assemblies. Spacer rings $\frac{5}{8}$" wide and cut on the same 28° bevel as the wheel and rim were installed. Width of dual spacing band between dual tires was reduced slightly so that the locking nuts on the bolts holding the rims to the wheels could be completely tightened.	**Rubbing and cutting ended** No tires lost from chafing since changes were made. **2.** **Mileage multiplied** Tires can be recapped after full mileage on original treads. **3.** **Money saved** Changeover was accomplished at very low cost. Fleet now gets an excellent return from its tire investment.

Experience in solving hundreds of special fleet problems like this often enables Lee to help when haulers are stumped by tire trouble. Whatever your tire problem . . . speeds, roads, loads, wheel design, tire design . . . bring it to Lee.

Lee Rubber & Tire Corp., Dept. 2J
Conshohocken, Pa.

Please send me information about your special engineering survey for truck fleets.

Name_____

Company_____

Address_____

LEE RUBBER & TIRE CORPORATION — LEE TIRES — CONSHOHOCKEN, PA.

extra miles from

RE-NU Accurate

heavy-duty clutch units

custom remanufactured to your specific needs sold or economically exchanged by your ReNu-Accurate Jobber

WRITE FOR NAME OF NEAREST JOBBER

Accurate Parts Mfg. Co. • 12435 Euclid Ave. • Cleveland 6, Ohio
Replacement Unit Co. • 1505 Rockwell Ave. • Cleveland 14, Ohio

ccj At Your Service

Continued from Page 12

monly accepted terms of lb per bhp per hour at rated speed and power. On this basis most makes and sizes of engines, gasoline or diesel, will fall in the range of .0005 to .002.

The fourth and last basic consideration in the performance of piston rings is wear. Type of service to which the engine is subject is the principal influence. It produces so much variation, in fact, that any rule of thumb for wear expectancy is virtually useless. However, if we had to make such a prediction for normal or average operating conditions, if such exist, we would say that top ring gap increase could be expected to be .001 per 1000 miles in the case of unhardened cylinders and .0005 for cylinders of 400-500 Brinell. These rates apply for unplated rings.

Chrome top rings would reduce these rates approximately 75 per cent.

Loose Valve Seat Inserts

By Vincent Young, Eaton Mfg. Co.

THE major service problem of inserts is that of loosening. There are several factors which may contribute to this:

1. Allowing the water level to drop below the position of the seat insert in the cylinder head or block. This may not show up immediately, but is one of the sure ways to loosen an insert. It is also a fine way to crack cylinder heads and blocks.

2. Improper installation can result in loosening. It is necessary that the counterbore be straight, that the insert be installed completely to the bottom of the counterbore without cocking, and the press fit must be recommended by the manufacturer. The loosening problem sometimes is tackled by increasing the press fit, but experience has shown that this does not work; it only hastens the time at which loosening occurs. If an insert is tight at room temperature, it will be tighter when the engine is hot and firing because the insert operates at a higher temperature than the cylinder head or block and, therefore, expands more.

3. Improper design; there are some designs of inserts in use which are not adequate under severe conditions. Heavy duty inserts generally require greater depth than a light duty insert. The objective here is to locate the area which is doing the holding of the insert as far from the combustion chamber as possible.

When an insert is applied to an existing design which previously did not use inserts, the proximity of the water jacket, or the shape of the port, may preclude the use of a rectangular section of sufficient depth. It is necessary then to use what we term a flange type insert where the ange has clearance on the OD between the insert and the counterbore to permit expansions to take place without distorting the seat. The insert is held in place at a greater depth and at a lower temperature zone.

(TURN TO PAGE 18, PLEASE)

STOP BURNING UP YOUR BATTERIES

use this simple plan that insures correct voltage regulation

BATTERIES and all electrical parts in your vehicles will perform better and last longer when your charge voltage is right. Everyone knows that. How to keep it right? That's easy, too. It's as easy as installing the Goodyear Fleet Battery Maintenance Plan.

Here's how it works: Each time your man waters batteries, he makes a quick test with the Goodyear All-Purpose Battery Tester and marks his findings on a separate Fleet Battery Record Card for each battery. As long as the marks fall within the "safety zone" (the stripe indicated on the card above), you know you're all right. A mark outside the safety zone is a warning signal that your voltage is too high or too low.

The voltage regulator being set too high could burn out the battery and shorten the life of every replacement item in the electrical system. A low voltage regulation setting causes frequent battery discharges, recharges and premature failures from sulphation.

With the Goodyear Fleet Battery Maintenance Plan you'll protect your batteries and get longer life from all circuit parts.

Yes, by using this Plan you'll save plenty on operating costs — and you'll save even more by using it with Goodyear Heavy-Duty Truck and Bus or Diesel type batteries. You'll find the whole story on this money-saving plan in a booklet called the Goodyear Fleet Maintenance Manual. Clip the coupon below and send for it today. It's free.

Goodyear, Battery Department, Akron 16, Ohio

GOODYEAR

THE GREATEST NAME IN RUBBER

FREE BOOKLET TELLS HOW TO PROLONG BATTERY LIFE

THE GOODYEAR TIRE & RUBBER COMPANY, INC.
Dept. I-7912, Akron 16, Ohio
Please send me a copy of the Goodyear Fleet Battery Maintenance Manual.
Name.....
Firm Name.....
Street Address.....
City.....Zone.....State.....
Number of trucks in Fleet.....

We think you'll like THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

Soak carbon off pistons

Just immerse your heavily carbonized pistons in a solution of Oakite Composition No. 18, the new solvent detergent that you mix with water.

Oakite Composition No. 18 removes even the toughest carbon deposits — leaves pistons, liners, carburetors bright and clean. Safe on aluminum alloys, steel, chromium, zinc, copper, magnesium. May be used cold or hot. Has no objectionable odor. Economical, too — solutions may be used over and over again—need little upkeep.

Try it yourself. Just ask your local Oakite Technical Service Representative for demonstration in your shop, or write Oakite Products, Inc., 26D Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

ccj At Your Service

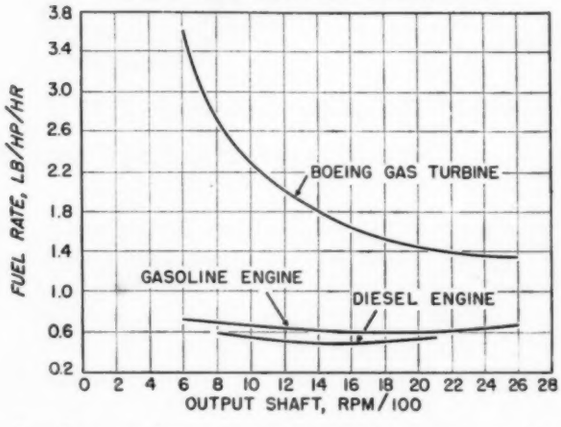
Continued from Page 14

On Gas Turbine Development

By Max Roensch

THE light weight and high power of the gas turbine with its maximum torque at stall or zero output shaft speed make this type of power plant very appealing to the bus and truck operator. These fundamental advantages, however, are in sharp contrast to the fundamental difficulties of this type of powerplant for ground vehicles because of the very high fuel consumption. Fuel rates two to three times that of conventional gasoline and diesel engines are normal at full

ENGINE PERFORMANCE COMPARISON

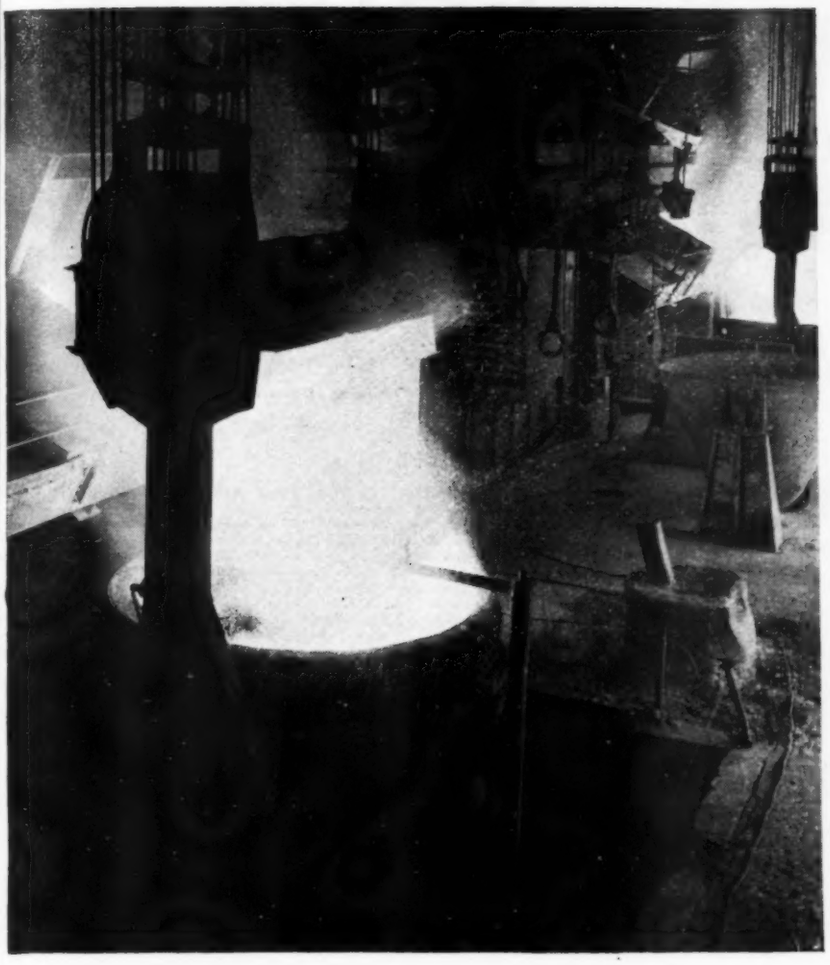


throttle operation and at light loads the consumption is many times greater; for example, at the idle, conventional engines use one gallon per hour while the turbine uses 12 gal per hour.

This latter characteristic would seem to confine this type of powerplant to truck operation where the majority of operating time is spent at full throttle. The most promising future engine for both truck and bus is the compound engine. The exhaust from either a gasoline or a diesel engine can be directed into a gas turbine so that the overall efficiency of this powerplant could be greatly improved. Ricardo in his experiments on this type of engine, has been able to get brake specific fuel consumptions of 0.3 lb per bh hour using a uniflow 2-cycle diesel engine and turbine combination.

Many may feel that this type of powerplant is too complicated, but there does not seem to be any real fundamental difficulties involved in achieving a satisfactory engine of this type. Many people thought that automatic transmissions were far too complicated to be satisfactory in passenger car and commercial vehicles, but the increasing application of these mechanisms to all types of transportation equipment indicate that the multiplicity of mechanical and metallurgical problems have been satisfactorily overcome. With a potential 25 to 50 per cent reduction in fuel possible through the use of compound engines, it is hard to believe that this promising new development will not be carried through to satisfactory completion by some capable organization.

We're fussy about steel—so we make our own



(Another reason why Timken® bearings are first choice with truck manufacturers)

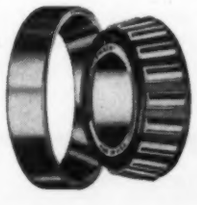
TO be sure to get the finest quality steel for Timken® bearings, we make our own. No other American bearing manufacturer does. No one else can watchdog bearing quality every step of the way—from melt shop through final bearing inspection.

Timken bearings are the only tapered roller bearings that give vou all these advantages: 1) special analvsis Timken steel, 2) advanced design, 3) rigid quality control and precision manufacture. That's why truck manufacturers make them their first choice.

Take your cue from the men who built your trucks. When you install a new tapered roller bearing, always make sure it's stamped with the trade-mark "Timken". Send now for your free copy of "Timken Tapered Roller Bearings — Their Care and Maintenance". Write Dept.CCJ-9, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

SINCE THEY'RE BEST WHEN THE TRUCK IS NEW, THEY'RE BEST FOR REPLACEMENT, TOO!

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ↕ AND THRUST →|← LOADS OR ANY COMBINATION ↔

Lithographers National Association Awards

MEYERCORD DECALS FIRST PLACE AGAIN IN 1953!

Produced for Storkline Furniture Corp. —Fawn and Bear crib decoration in third dimensional technique.

1st 1953

Produced for Eli Lilly and Co.—oil paint recreation of Florence Nightingale distributed in observance of hospital week.

1st 1952

Awards Made for Outstanding Merit and Distinction in Production of Decalcomania Lithography

For the second straight year the decal industry has been invited to compete in the Lithographers National Association Awards . . . and for the second straight year we proudly acknowledge the winning of FIRST PLACE by The Meyercord Co. This award is made to recognize and honor those responsible for the design, creation and production of outstanding examples of decal lithography. Not content to rest on our laurels, Meyercord will continue, as in the past, to create even better new ideas and techniques to serve industry with decal transfers for every needed application . . . for every commercial surface and finish.

It is important to you to know that The Meyercord Co. has been honored by expert judges recruited from top levels of the graphic arts. When you bring your decal transfer problem to Meyercord you are *sure* you will receive the counsel of carefully trained and experienced people . . . backed by the finest and most complete laboratory and production facilities available.

Your inquiry is invited . . .

THE MEYERCORD CO.

World's Largest Decalcomania Manufacturers

DEPT. J-515, 5323 WEST LAKE STREET • CHICAGO 44, ILLINOIS

DATES *and* DOINGS

(For calendar of fleet courses, see page 131)

SEPTEMBER

10-12—Michigan Trucking Assn., Annual Convention, Whitcomb Hotel, St. Joseph, Mich.
14-15—Wisconsin Motor Carriers Assn., Annual Convention, Lake Lawn Resort, Lake Delavan, Wis.
14-17—Society of Automotive Engineers, Tractor and Production Forum, Hotel Schroeder, Milwaukee, Wis.
17-18—Tennessee Motor Transport Assn., Annual Convention, Greystone Hotel, Gatlinburg, Tenn.
17-19—Virginia Highway Users Assn., Annual Meeting, Hotel Roanoke, Roanoke, Va.
20-22—National Truck Leasing System, Annual Meeting, Palmer House, Chicago, Ill.
21—Central Motor Freight Assn., Annual Meeting, Conrad Hilton Hotel, Chicago, Ill.
21-23—Truck Body and Equipment Assn., Annual Convention and Exhibit, Hotel Sheraton-Gibson, Cincinnati, Ohio
21-24—National Assn. of Railroad and Utilities Commissioners, Convention, Hotel Roosevelt, New York, N. Y.
22-26—American Trucking Assns., National Truck Roadeo, Minnesota State Fair Grounds, Minneapolis-St. Paul, Minn.
23-25—National Assn. of Motor Bus Operators, Annual Meeting, Fairmount Hotel, San Francisco, Cal.
23-27—Local Cartage National Conference, Annual Convention, Hotel Chase, St. Louis, Mo.
24-26—Kansas Motor Carriers Assn., Annual Meeting, Hotel Broadview, Wichita, Kan.
24-26—North Dakota Motor Carriers Assn., Annual Meeting, Ray Hotel, Dickinson, N. D.
24-26—Pennsylvania Motor Truck Assn., Fall Meeting, Galen Hall Hotel, Wernersville, Pa.
26—Massachusetts Motor Truck Assn., Annual Meeting, The Somerset Hotel, Boston, Mass.

OCTOBER

5-6—North Carolina Motor Carriers Assn., Annual Convention, Hotel Carolina, Pinehurst, N. C.
19-23—National Safety Council, National Safety Congress and Exposition, Commercial Vehicle and Transit Safety Sessions, LaSalle Hotel, Chicago, Ill.
26-28—National Lubricating Grease Institute, Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.
26-30—American Trucking Assn., Annual Convention, Hotel Statler, Los Angeles, Cal.
28-30—American Society of Body Engineers, Annual Technical Convention, Rackham Memorial Bldg., Detroit, Mich.
29-Nov. 1—Automotive Parts Rebuilders 1953 Convention, Sherman Hotel, Chicago, Ill.

NOVEMBER

2-3—Virginia Passenger Bus Assn., Annual Convention, Roanoke Hotel, Roanoke, Va.
2-4—Society of Automotive Engineers, Transportation Meeting, Conrad Hilton Hotel, Chicago, Ill.
3-4—Society of Automotive Engineers, Diesel Engine Meeting, Conrad Hilton Hotel, Chicago, Ill.
5-6—Society of Automotive Engineers, Fuels and Lubricants Meeting, Conrad Hilton Hotel, Chicago, Ill.
5-7—Idaho Motor Transport Assn., Annual Convention, Hotel Boise, Boise, Idaho.
7—New Hampshire Truck Owners Assn., Annual Convention, Hotel Carpenter, Manchester, N. H.
9-12—American Petroleum Institute, Conrad Hilton Hotel, Chicago, Ill.
9-13—Refrigeration and Air Conditioning Exposition (including truck refrigeration equipment), Public Auditorium, Cleveland, Ohio.
18-20—Arkansas Bus and Truck Assn., Annual Convention, Marion Hotel, Little Rock, Ark.
19-21—Montana Motor Transport Assn., Annual Convention, Florence Hotel, Missoula, Mont.
22-24—Florida Trucking Assn., Annual Convention, Hollywood Beach Hotel, Hollywood Beach, Fla.

B.F.Goodrich

ALL-NYLON Traction Express outwears a regular tire plus a recap!

Tire rolls 180,000 miles for New Jersey trucker

The first B. F. Goodrich Traction Express tires used by Harrison Motor Freight of Hillside, N. J., have rolled 180,000 miles and are still going strong! Pres. Harry Harrison (above, right, examining a new set of Traction Express tires) reports this is *more than three times the mileage ever obtained from any other tire.* Their 230 units are equipped 100% with BFG tires.

One reason for such amazing mileages is the Traction Express tread—up to 46% thicker than that of regular truck tires.

Nylon is stronger than ordinary tire cord materials, can withstand double the impact and resist heat blowouts and flex breaks. The *all-nylon* Traction Express outlasts the life of even its extra-thick tread and *can still be recapped over and over!*

NEW COMPRESSED TREAD

The Traction Express tread is built on a new principle—it is *compressed.* When molded, the beads are close together. When mounted, air pressure spreads the beads to full rim width. The sidewalls act as levers, compressing the tread and putting it flat on the pavement for long, even wear!

96% more mileage than from other makes of tires is the record of Traction Express tires used by Cotton's Holsum Bakers of Alexandria, La.

At no extra cost you get the bonus of the patented nylon shock shield.

You pay a little more for the *all-nylon* Traction Express (rayon construction at lower prices), but you get a tire that users say gives more original mileage than a regular tire plus a recap! See your B. F. Goodrich retailer. The address is listed under Tires in the Yellow Pages of your phone book. Or use coupon.

Specify B. F. Goodrich tires when ordering new trucks

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

The B. F. Goodrich Co.
Dept. TF-225,
Akron 18, Ohio

Please send me:
- ☐ More information on the new Traction Express tire
- ☐ The name of my nearest retailer
- ☐ Free book, "How to get more recaps out of truck tires"

Name_____

Company_____

Street_____

City_____ Zone____ State_____

Laugh it off!

AWFUL ORVILLE, OUR IMPERTINENT OFFICE BOY, SAYS: "IT ISN'T GOOD POLICY TO LOAF ON THE JOB. THE BOSS MIGHT FIRE YOU FOR IMPERSONATING A RELATIVE."

C C J

The road service mechanic, on a road-failure call in a sparsely settled region, was forced to take a detour. He had just about given himself up for lost. Suddenly he came to a cluster of four cabins at a crossroad. Stopping his service truck, he hailed a native standing by the road.

"I'm looking for a town called Shinbone, can you direct me to it?"

"Stranger," the native replied, "don't move a damn inch."

C C J

Safety Sadie: "If you want me to continue as your room mate, you're going to have to pull down the shades when you undress. Why, there were two men outside the window peeping in while you undressed a few moments ago."

Catty Cora: "You should have seen the mobs when I was younger."

C C J

Auto Parts Clerk: "Sir, I should like permission to marry your daughter. I am convinced that she and I were simply made for each other."

Sweety Pie's Papa: "Young man, that's where you're wrong. At the time, we had no such thought in mind."

C C J

She was simply crazy about the big, handsome Freight Checker. In fact, she was so hopelessly in love that she had his picture tattooed right over her heart.

But, as happens so often, her ardor cooled and she left him and married a Truck Driver.

On her wedding night her driver husband looked at the tattoo job and laughed as he remarked, "Think of the long face that fellow's going to have later on."

The progressive East-West Motor Carrier employed a young psychiatrist and placed him in their personnel section in an all-out effort to select the best mental-physical specimens for employment. The young psychiatrist was dating a beautiful and buxom blonde babe, who continually asked him to open his own psychiatric clinic. But he insisted on staying with the carrier.

Finally the blonde delivered this ultimatum: "If you're interested in further romance with me, don't come back until you know how to own your mind business."

C C J

Garage Operator: "Young man you seem to have a good background, but I had a more experienced man in mind for the job. There's lot of things that you have to know in order to qualify. For instance, can you take a yard stick and measure the exhaust coming out of that truck-tractor over there?"

Young Applicant: "Sure I can, if you'll just hold one end of the exhaust for me."

C C J

First Greasemonkey: "Want to take my sister to a dance?"

Second Ditto: "What does she look like? Describe her."

First Greasemonkey: "I'll pay the expenses."

Second Ditto: "Sorry, I have a previous committment."

—"Cici Jay"—

GABBY GERTIE: (ON SUNDAY MORNING) "HOW WAS YOUR PARTY LAST NIGHT?"

DIZZY DOLLY: (ON OTHER END OF PHONE) "WE'RE HAVING A SWELL TIME."

C C J

Maid: "The master's locked up for the night, ma'am."

Maintenance Superintendent's Wife: "I didn't hear him come in."

Maid: "He didn't come in, ma'am. The police just phoned."

C C J

Warehouseman's Wife: "What's this I found in your trousers pocket?"

Warehouseman: "That's a pawn ticket."

Wifey: "Why didn't you get two so we could both go? You never take me any place."

C C J

Landlord: "I have come to collect the rent!"

Shop Roustabout: "I just can't pay you this week."

Landlord: "You said that last week, and the week before and the week before!"

Shop Roustabout: "Yes I did. And didn't I keep my word?"

C C J

Steno Lou: "You've been thumbing the pages of that dictionary for more than 20 minutes. What are you trying to find?"

Steno Sue: "Well, the boss wrote a memorandum to 'All Freight Solicitors' telling them to cut down on their expense accounts or they were going to throw the company into bankruptcy. So I'm trying to find 'bankruptcy'."

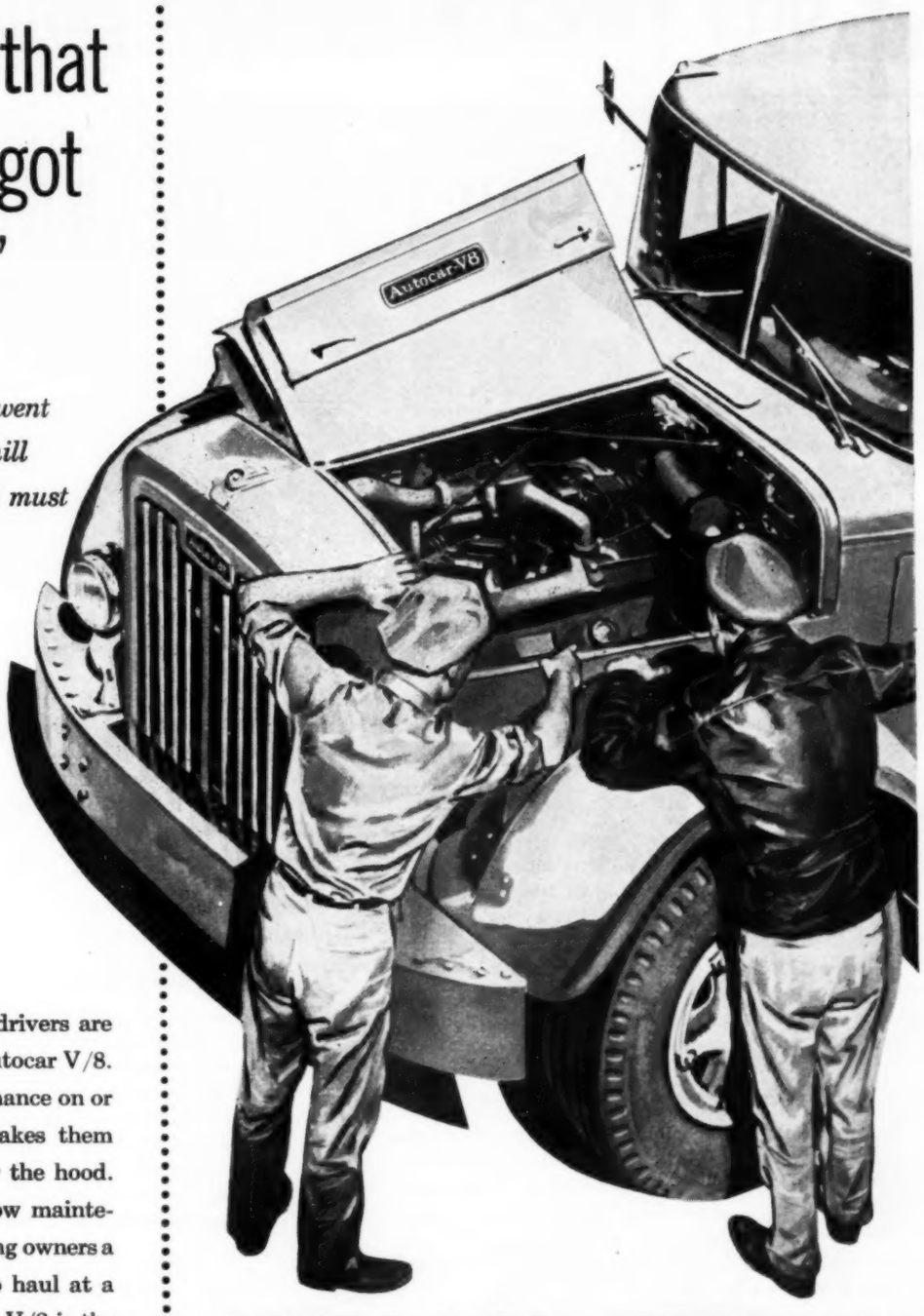
Steno Lou: "Why are you looking under the 'R's? You will find that under the 'B's'."

Steno Sue: "Oh, I know how to spell 'bank'. Now I'm looking for 'ruptcy'."

Resume Work

"What's that you've got there?"

"The way you went by me up that hill —I figured you must have a load of feathers!"



That's what other drivers are saying about the Autocar V/8. Its amazing performance on or off the highway makes them want to look under the hood. Its economy and low maintenance costs are giving owners a new idea of how to haul at a profit. The Autocar V/8 is the greatest thing in heavy-duty hauling.

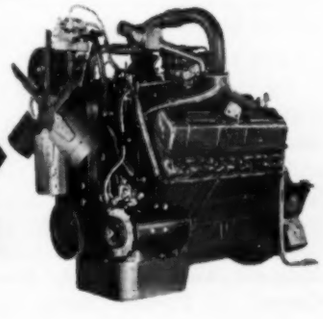
Find out for yourself what the Autocar V/8—200 horsepower pulling a new lighter-weight chassis—can do for you.

AUTOCAR TRUCKS

The Autocar Company, Ardmore, Pa., U.S.A.

ESTABLISHED 1897

Factory Branches and Distributors from Coast to Coast in the United States and Canada. Export Division: Drexel Building, Philadelphia 6, Pa., U.S.A.



Send for the Autocar V/8 booklet

The Autocar V/8

CCJ NEWS REPORTS

WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Leasing Regulations . . . Parts Postponed

In mid-August, the Interstate Commerce Commission postponed until March 1, 1954, the effective date of sections of its leasing regulations, Ex Parte MC-43, which prohibit truck leasing for less than 30 days and those pertaining to compensation. Postponement of these sections was at request of the Senate Agriculture Committee and several individual senators on the ground that the Senate should have a chance to act on the House-passed bill, HR 3203, which prohibits ICC from regulating duration of lease or amount of compensation. All other provisions of the regulation went into effect as scheduled, Sept. 1. For full details, see COMMERCIAL CAR JOURNAL, August, page 64.

Defense Freight . . . Continues Strong

Looking ahead, Washington experts don't foresee much reduction in defense freight traffic for another 12 or 18 months, despite signing of truce and reduction in defense funds. Reason is military services have a $72 billion backlog in undelivered orders, were given $34.4 billion in new money, at least $10 billion of which will go for major types of procurement. High defense officials say delivery rate will be slightly higher than last 12 months.

Civilian Freight . . . Increases

Economists in the Capital also forecast a continued rise in freight traffic in general. Highway carrier volume is running 10 per cent ahead of 1952 (compared with 8 per cent for rail), with increased tonnage in the offing. One source is mail—more postal contracts, perhaps for longer hauls than at present. Air freight is up 14 per cent.

Fast Rate Increases . . . Slowed

Fight waged by carriers to obtain faster action on applications for rate increases goes over till next session of Congress. Congress adjourned before action could be taken on S. 1461 which, in effect would call for interim increases if more than 50 days were needed for ICC to come to a decision.

Excise Taxes . . . Not Cut

Congress refused to cut automotive excises during the session just ended but the tax-writing House Ways and Means Committee kept tax hearings going until well into August. Among scores of witnesses to appear and express the views of both industry and operators were officials of American Trucking Assns., National Assn. of Motor Bus Operators, National Council of Private Motor Truck Owners, Truck-Trailers Mfrs. Assn., National Highway Users Council and others. Testimony was unanimous that excises on vehicles and parts are discriminatory, restrictive on business, are not proportionate, and threaten national transport policy. For detailed analysis of the problem, see page 64, this issue.

But . . . Might Be

Members of the tax committee seem to have been impressed by industry's arguments. Some say bluntly that they will flatly oppose any move, by the administration or otherwise, for further extension of present rates. This means that at least there should be a reversion next April to previous rates before the Revenue Act of 1951—a reduction in the present 8 per cent on trucks, buses, truck-trailers, and parts to 5 per cent. Automatic decrease on gasoline and diesel fuel would be from the present 2 cents a gallon to 1½ cents. White House will oppose any outright lifting of excises; has gone on record as favoring "modification" of existing rates.

ICC Field Work . . . Protected

Funds for operation of the ICC during the current fiscal year will be approximately the same as for last year. Final approval of funds came only after defeat of the annual move to add a rider to the money measure which would have prohibited the ICC from using any of the money for carrying on motor carrier field and safety activities.

Depreciation . . . Better Terms

There's a better than even chance that fleet operators may get a better break on depreciation rates for vehicles and equipment as a result of the tax legislation overhaul now in the making. New idea is to let the buyer name his own write-off period—within certain limits. Talk now is that the minimum would be not less than two years for a truck, tractor, or trailer, five years for loading and handling equipment, and 10 years for terminals and other buildings.

Trucking Industry . . . Postage Stamp

Special postage stamps commemorating the 50th anniversary of America's trucking industry will go on sale on October 27, in conjunction with the convention in Los Angeles of American Trucking Assns. Selection of 1953 as the anniversary date was based on the fact that the first demonstration or contest to show the truck to be superior to horse-and-wagon was held in New York City in 1903. In late August, Postmaster General Arthur Summerfield had not yet selected the design and color.

For Bonus Payload on Every Trip...

Model 302662 White with Trucktor Model HLR Third Axle, 10.00/20 tires, mechanical air brakes, 3250 gallon gasoline tank.

...This New White Tanker has a

Trucktor
"Truck-Mated"
3rd AXLE

TRUCKTOR THIRD AXLES — available for most truck makes and models, continue to solve the "more payload per trip" problem for many industries. Users hauling oil, gasoline, coal, lumber, grain, produce, steel, etc., get up to double original payload capacity — *plus* greater safety, smoother riding, and these unique advantages of Trucktor's "Truck-Mated" design:

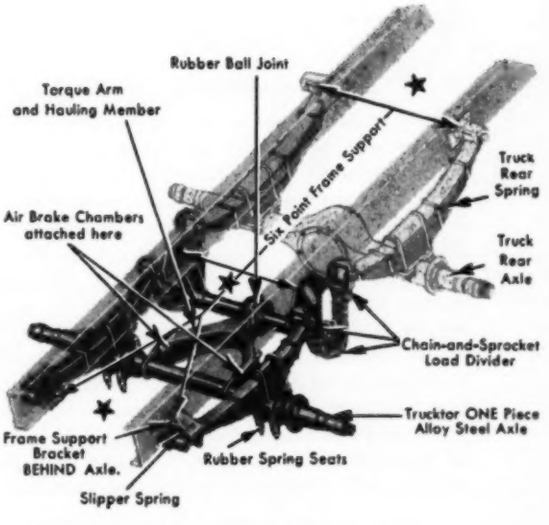
LESS STRAIN ON TRUCK FRAME—6-point frame support distributes increased load, braces frame, provides support points *behind* the last axle.

MORE STABLE RIDE—Two extra springs carry extra load smoothly, safely—provide lower center of gravity, greater flexibility, less side sway.

PERFECT TRACKING—Springs ride "free" through Chain-and-Sprocket Load Divider—unique yoke arrangement hauls the trailing axle, absorbs all braking torque!

LOWER MAINTENANCE COSTS—Simple, rugged, fewer working parts. Spring seats and yoke head *rubber mounted.* Only 8 lubrication points.

Trucktor is designed to *augment—not* alter—basic truck design. Installation also follows this principle. When necessary, a double frame is provided by the truck factory. In all cases, Trucktor's springs are balanced with the truck springs, and the Chain-and-Sprocket Load Divider set for proper load distribution. For further information, see your truck dealer or Trucktor Distributor, or write direct.



★ CROSS MEMBERS LOCATED AT THESE POINTS

TRUCKTOR Detachable Chain-and-Sprocket 4-Wheel Drive

Makes tire chains unnecessary. When extra traction is needed, sprocket chains are slipped over sprockets and pinned. Attached and detached quickly, simply, without removing wheels (in picture, wheel removed to show construction).

For further information, see your Truck Dealer, Trucktor Distributor, or write to

THE TRUCKTOR CORPORATION, Route 22, Mountainside, N. J.

Safety **IS NO ACCIDENT** — *6-Wheelers* **ARE SAFER!**

CCJ NEWS REPORTS

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Muffler Noise . . . Split

Latest in the muffler noise project is that truck makers are considering adopting an arbitrary standard of their own on noise measurement and build to that specification. Truck builders do not agree with the Armour method of measurement approved by ATA. Enforcement equipment would be left to local officials in the field for development of instrumentation and methods.

Disc Brakes . . . Maybe

One manufacturer is taking a more serious look at the disc or "spot" brake, the type used on large aircraft and which has tremendous stopping power. It admittedly is more costly, and cooling is a problem on trucks. This might be counteracted by use of a "floating" linkage between the cylinder and shoe to prevent heat transfer into the brake fluid, which causes it to vaporize.

Better Headlights . . . Coming

Basic improvement in vehicle headlighting is under development and could be here by 1955. A joint project between the automotive industries and electrical equipment manufacturers, it encompasses a new design of the sealed beam lamp to give better road illumination, more contrast to objects in the roadway and somewhat improved anti-glare characteristics. Seeing distance ahead is greater with more light thrown to right hand side of the road. Also illumination in rain and fog is better, and "flash glare" is less for approaching drivers at close range. Motor vehicle administrators will have to approve, some state laws will have to be changed and makers will have to tool up before it can be adopted. At that time the whole industry will switch over to the new headlamp.

"Maintenance Management" . . . by White

A careful look at its own experience with regard to guaranteed truck maintenance has resulted in a significant realignment of thinking at White Motor Co. Currently the company is pushing this type of dealer or branch maintenance only where the fleet's own facilities are inadequate or non-existant. For fleets with good facilities of their own, White has a new plan known as "Maintenance Management Program." It consists of (1) a factory school for maintenance supervisors and (2) in-shop consultant services by White factory-trained engineers. We understand the school is already in progress and announcement of specific dates is expected shortly. White has also announced a budget payment plan permitting up to 12 months to pay for truck replacement engines and repair service costing $250 or more. It also includes a trade-in plan where other makes of engines could be traded on White replacement engines.

Bus . . . with Gas Turbine Engine

General Motors is reported to be fairly close to announcement of its experimental bus powered with a gas turbine. No special significance is attached to the project, since GM engineers feel that there still is a long way to go before the turbine is an economic possibility for commercial use because of high fuel consumption. The corporation believes, however, that the problems will be much easier to study with a unit in actual operation.

Registrations . . . Dropping

Indication of the tough competitive market in trucks is the decline in new registrations in the last two months for which complete figures are available. From a high point of more than 91,000 in April new truck registrations dropped 6000 in May and were down an additional 9000 in June. Total for the first six months of this year, however, still was 85,000 ahead of a year ago.

Ford . . . New "De-Popper"

Ford is equipping its heavy duty trucks with a special valving arrangement in the carburetor to eliminate loud popping, characteristic of large engines when the vehicle is decelerating or descending a grade with closed throttle. The "de-popper" also can be installed in 1952 Ford trucks equipped with the overhead valve V-8 engine by replacing the carburetor. The device, exclusive with Ford, eliminates popping by upsetting the fuel mixture to a point where it cannot support combustion by controlling the air intake.

NATA . . . Offers Scholarships

National Automobile Transporters Assn. is giving an important boost to higher education for the truck transportation industry and getting in a few good public relations licks in the bargain. The NATA Board will provide 25 university scholarships this year for students who wish to major in truck transportation.

Willys

One of the many leading engine manufacturers to select and distribute Perfect Circle's 2-in-1 chrome piston ring set for authorized replacement service

2-in-1 is the truly modern piston ring equipment, controls oil—seals compression for over twice as long as old style sets. Solid chrome protects both oil rails and top compression rings against wear. And only 2-in-1 offers a choice of spring pressures with each oil ring to meet any cylinder wear condition.

For sustained power and positive oil control for thousands of extra miles, always install Perfect Circle 2-in-1 piston ring sets. Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Toronto, Ontario.

Perfect Circle

PISTON RINGS The Standard of Comparison

NEWS REPORTS

SEPTEMBER ROUNDUP

by ERNIE FOREST Assistant Editor

Business . . . What Is Coming?

How will business be for the rest of the year? That is the big question—now that Labor Day is past—in view of last January's forecast that there might be a "slight recession" along about this time.

The picture has changed, however. Taking into account all the familiar economic yardsticks, best answer seemed to be that business would continue strong, especially where there was confidence and more emphasis on selling and merchandising. And that means plenty of work for both private and for-hire carriers.

Some Things . . . Not So Good

On the minus side were a few things to be considered. Increasing prices could meet with consumer resistance and lower sales. Farm income and used car sales were down. Business inventories at the end of June were $4.8 billion higher than the same time last year. To balance this, however, sales were up, leaving the ratio of sales to inventory about the same.

And Others . . . Booming

On the plus side to be considered were:

Gross national product—total of all goods and services produced—was at a record annual rate of $372.4 billion at the end of June.

Personal consumption spending for the second quarter was at an annual rate of $230.4 billion as compared to the first quarter's $227.7 billion.

Estimates of total 1953 construction might exceed the original $33.5 billion estimate by an additional billion.

First half year earnings reports generally showed higher sales and increased net.

Truck freight was running 10 per cent higher than last year and defense freight was expected to continue strong (See Washington Runaround, page 58).

National income in the second quarter was at an annual rate of $306.5 billion as compared to $291.6 for 1952.

Stock market averages continued strong despite pre-Korean truce guesses that end of the fighting would bring a market drop.

(For a report on some specific signs to watch for, see the summary of Truck-Trailer Mfrs. Assn.'s Summer Meeting, page 98, this issue.)

SAE . . . West Coast Meeting

Tires, diesel engines, alternator systems, vehicle depreciation, cold weather fuels and lubricants came in for their share of attention last month at the Society of Automotive Engineer's International West Coast Meeting in Vancouver, B. C. For an interesting approach to vehicle replacement presented at this meeting see page 72, this issue.

aTa Meeting . . . 725 Attend

The 72nd Annual Meeting of the American Transit Assn., held in Los Angeles last month brought over 725 representatives from a wide cross section of the country. The small operations division session covered such maintenance subjects as garage cleaning, undercoating, battery additives, road failures and various overhaul practices. The maintenance men participated in a fast-moving round table discussion which provided valuable comparison data for both small and the larger operations.

The property inspection trip scheduled for the last afternoon session saw a heavy turnout, when approximately 75 bus men toured the shops of Los Angeles Transit Lines and the properties of the Pacific Electric Railway Co. in search of maintenance and shop construction tips that could be applied to their respective properties.

Laurence Wingerter, San Antonio Transit Co. president, was elected president of aTa. Donald C. Hyde, Cleveland Transit System general manager, was named vice president and John E. McCarthy, Fifth Avenue Coach Co. president, becomes treasurer.

And . . . More Meetings Coming

National meetings of interest to fleetmen later this month and next—in addition to Truck Body and Equipment Assn.'s Convention and Exhibit reported on page 216 last month—include Local Cartage National Conference—Sept. 23-27, National Assn. of Motor Bus Operators—Sept. 23-25, Annual National Safety Congress and Exposition—Oct. 19-23, and American Trucking Assn.'s Annual Convention—Oct. 26-30.

Local Cartage . . . In St. Louis

Subjects up for discussion at the Local Cartage meeting, to be held at the Chase Hotel, St. Louis, Mo.,

(TURN TO PAGE 192, PLEASE)

MULTI-STOP LEADER FOR 15 STRAIGHT YEARS

The performance of International Trucks with Metro® bodies is unmatched. They're designed for multi-stop service. Owners' cost records have made them multi-stop sales leader for 15 years.

You get more payload space on shorter, more maneuverable chassis. *You save time* in traffic and on delivery routes. *You save space* at loading dock and in the garage. You have a choice of *4 body lengths.*

You profit from features that *save driver time and energy.* Full 6-foot headroom and low stepwell speed loading and unloading. Broadleaf springs and new shock absorbers provide maximum driver comfort.

Compare all-truck construction that gives you unmatched chassis stamina, engine power, and operating economy. *Compare* the long life and low maintenance cost of the all-steel Metro body. It's the multi-stop body that outlasts them all.

See your International Dealer or Branch today

NEW INTERNATIONALS WITH NEW METRO BODIES

Compare them with any other multi-stop truck on the market!

More Payload Space. Eight body sizes, two body styles—standard or flatback. Four body lengths—7¾, 9½, 10½, and 12-foot; *each* has increased capacity. New capacities range from 243 to 392 cubic feet.

New Driver Convenience. New full 6-foot headroom. Low stepwells. Sliding front doors standard, folding doors optional. Six rear door options.

New Driver Comfort. New broadleaf springs. New shock absorbers. Lower center of gravity. New toeboard angle.

New Savings. New downdraft carburetion for greater fuel economy. New cushioned disc clutch for longer life, smoother operation.

Six chassis models, 102, 115, 122, and 134-inch wheelbases. GVW ratings, 5,400 to 10,000 lbs.

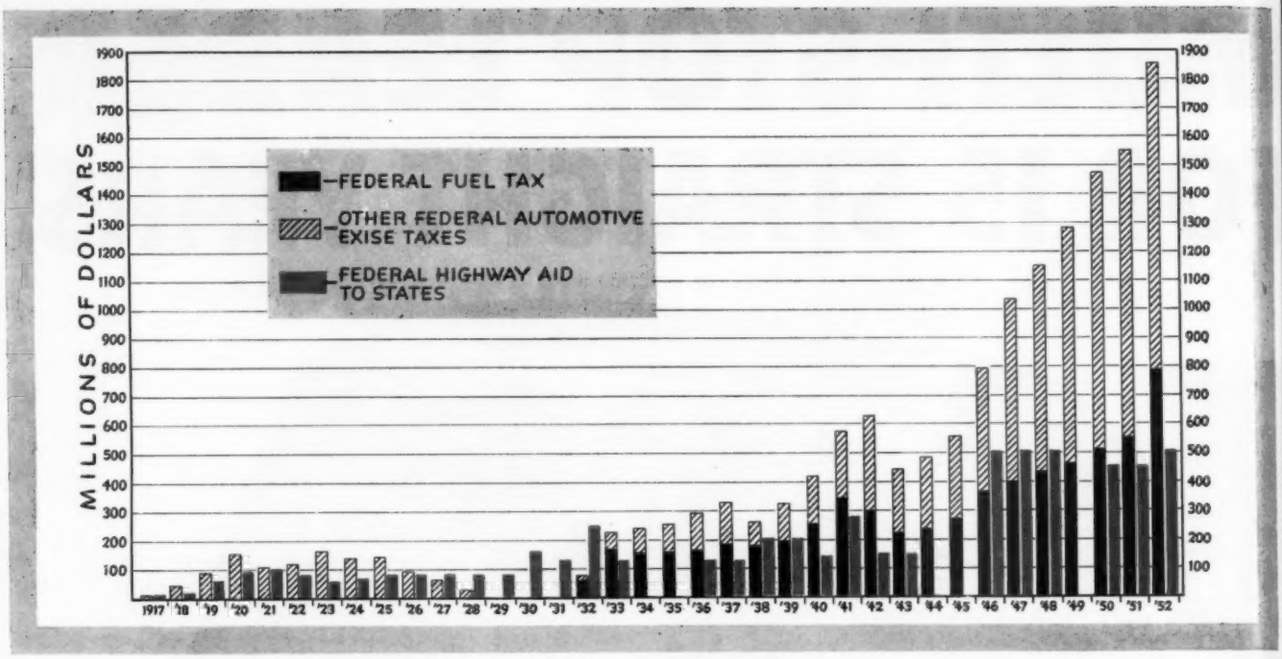
INTERNATIONAL HARVESTER COMPANY · CHICAGO

International Harvester Builds McCormick Farm Equipment and Farmall Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"



Above. Here is the picture of federal fuel and excise tax collected over the years as compared to amounts paid out in federal highway aid to states. At right. Comparison of federal highway user tax receipts with federal highway aid for 1952 shows amount for roads is $288 million less than fuel tax

The Great Highway Robbery

...Or is it?

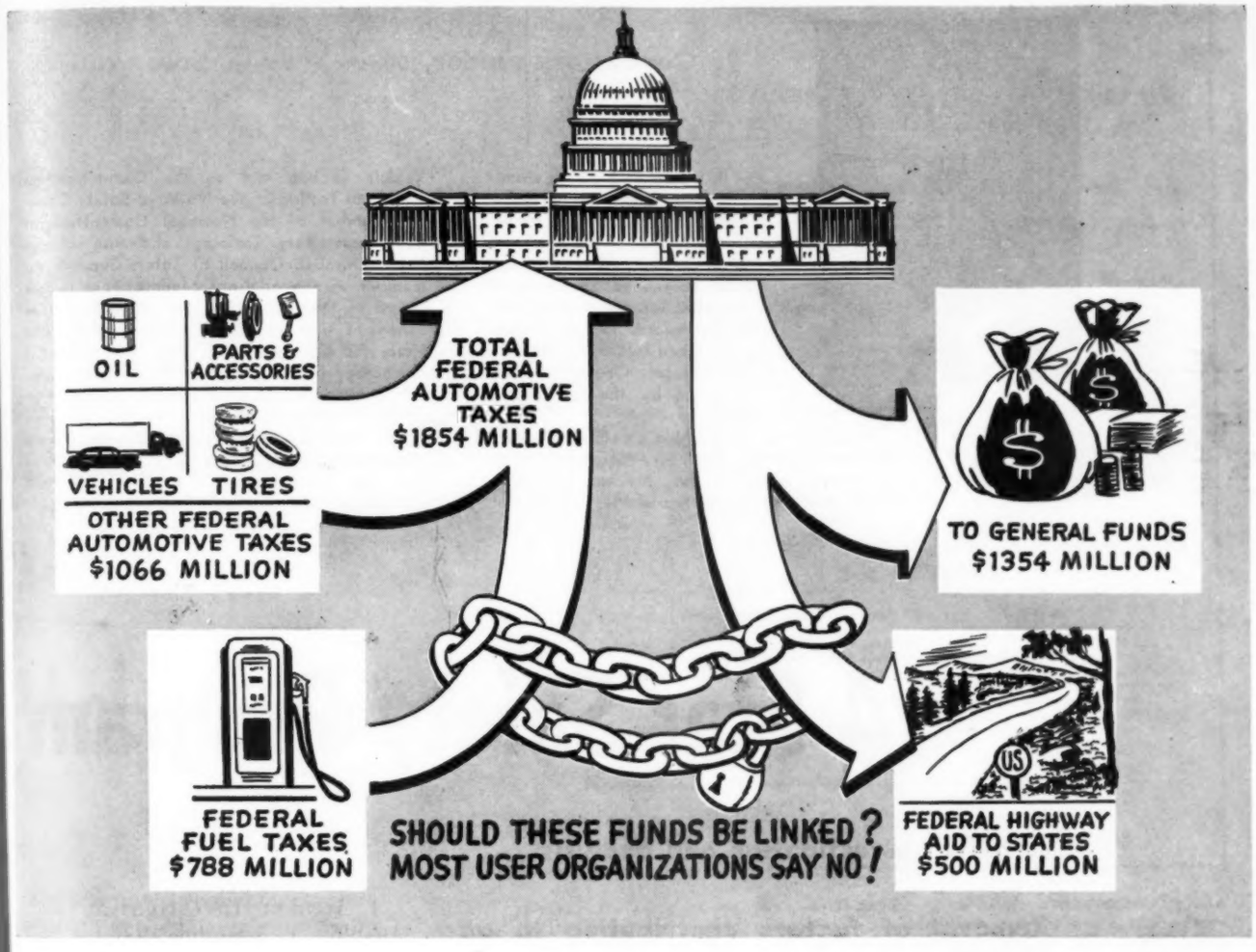
Some say federal government should pay out for highways what it takes in from highway users, others say no. Here is pro and con on the matter

Long a controversial topic, the federal government's role in highway finance and taxation has been spotlighted in recent months as preliminary studies were made prior to revising the Federal Aid Road program. One series of House Committee hearings have already been held, and it has been indicated that Senate committee hearings are scheduled for future months.

In the accompanying article, Henry K. Evans, Transportation Specialist of the U. S. Chamber of Commerce, presents for CCJ readers a specially prepared analysis of the controversy, supplies valuable background material for an understanding of future developments on the subject of federal highway financing. In addition he presents an exclusive survey of formal and informal viewpoints of various national groups and government agencies in the highway financing problem.

THE United States Government stands accused—justly or unjustly—of playing the dirtiest kind of trick on the nation's 53 million truck, bus and auto owners.

The charge—shortchanging highway users out of hundreds of millions of dollars every year in taxes collected from them but not used for their benefit. In addition, Uncle Sam has been labelled by some as a double crosser, because he penalizes states who don't use state gas tax


OIL
PARTS & ACCESSORIES
VEHICLES
TIRES
OTHER FEDERAL AUTOMOTIVE TAXES $1066 MILLION
TOTAL FEDERAL AUTOMOTIVE TAXES $1854 MILLION
TO GENERAL FUNDS $1354 MILLION
FEDERAL FUEL TAXES $788 MILLION
SHOULD THESE FUNDS BE LINKED? MOST USER ORGANIZATIONS SAY NO!
US
FEDERAL HIGHWAY AID TO STATES $500 MILLION

revenues on highways yet fails to practice what he preaches when it comes to federal gasoline taxes.

Here's what's raising the ruckus that's growing louder and hotter in Congress.

The federal government will collect this year over $2 billion in excise taxes on gasoline, oil, tires, motor vehicles and accessories, yet plans to provide only a half-billion or so in federal aid for highways. State highway officials have told Congress that federal aid ought to be raised at least to what's taken in federal gas taxes, which will amount to around $900 million this year, and others are clamoring for earmarking the entire $2 billion for highways.

If we take the World War I automotive excises into account we find that $17.2 billion has been collected in federal automotive taxes up until the beginning of this year. Of this, $7.2 billion was in gasoline taxes alone. (The highway-user portion

By Henry K. Evans
Highway Transportation Specialist
United States Chamber of Commerce

was $6.4 billion.) Total federal highway aid during this period has come close to $6 billion. The latest reports from the Bureau of Internal Revenue indicate that excise revenues are on the increase. For instance, the first nine months up 'til March 1 of the current fiscal year has produced $675 million in gasoline tax, 27 per cent over the corresponding total a year ago, and taxes on passenger cars, motorcycles and trucks are up even more.

Federal excise tax payments on new motor trucks, buses and trailers are heading for an all-time high in 1953 according to the Automobile Manufacturers Association. In fact such excises paid by U. S. truck owners have grown 730 per cent in the past 10 years or 3500 per cent since the first full year they were in effect, 1933. Last year they amounted to $108 million.

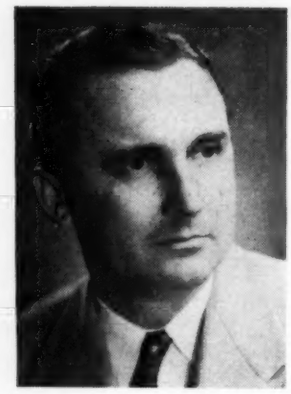
For years many groups have been working energetically for repeal of these automotive excises, recognizing them as temporary revenue producing devices. Now there is a growing feeling in some quarters that these taxes are here to stay, and that the next best thing, then, is to get them returned to the highway users.

Oppose Linkage

THIS attitude, however, has served to raise the blood pressure of many who say there should not be, in fact never has been any legal, logical or moral reason for linking the amount of federal highway aid to the amount collected in federal taxes levied against highway users.

The principal objection is that once this linkage is established, it will be impossible to get rid of the

(TURN TO PAGE 106, PLEASE)



By Carlton Alexander, Director of Safety, McLean Trucking Co.

In tribute to his high standard of professional achievement in the field of motor transportation safety engineering, Carlton Alexander has been chosen as the winner of the 1952 Marcus A. Dow Memorial Award. This award was established in 1951 by the National Safety Council through a grant by the Greyhound Corp.

In addition to establishing an effective safety program in his own fleet, Mr. Alexander served the industry in many ways. He was a member of the executive committee of the Commercial Vehicle Section and on the Committee on Chemical Testing of the National Safety Council; member of the National Committee for fleet Supervisory Training; chairman of the North Carolina Council of Safety Supervisors; member of the advisory committee to review course content material, University of Tennessee School of Transportation; chairman of the advisory committee, Department of Industrial Psychology and member of the advisory committee of the School of Education, North Carolina State College. He aso served as chairman of the Truck and Bus Section of the Governor's Highway Safety Conference of North Carolina, and has been active as an author and lecturer on safety engineering.

4 Star Safety Program

★ **Accident investigation and analysis**

★ **Removal of factors contributing to accidents**

★ **Creating a desire in drivers to drive defensively**

★ **Removal of subjective factors contributing to accidents**

WE BELIEVE that, to be effective, a safety program requires a great deal more than wishful thinking, considerably more than periodic inspirational talks, and much more than passive driver recognition. To be blunt about it, it takes a broad program, carefully coordinated and administered by the safety department, backed up by the full endorsement of all levels of management, and supported with good, cold U. S. dollars.

We believe that we have such a program at McLean Trucking Co., and we feel that our accident record, as follows, indicates that we are on the right track:

Year	*Miles Per Accident*	*Liability Cost Per Mile*
1949	46,135	.0088¢
1950	58,336	.0046¢
1951	73,222	.0038¢
1952	145,828	.0025¢

Each year, however, we strive to make it more effective.

Like any good program which is designed to prevent accidents, ours is comprised of four separate and distinct phases:

1. Accident Investigation and Analysis—to determine all of the factors which contribute to all the accidents.

2. The Removal of the Objective Factors which contribute to accidents. This is done by: (a) providing the worker with a safe tool (truck); (b) providing the worker with a safe place in which to work (terminal areas, customers' places of business, selection of routes, etc.); and (c) providing the worker with safe working conditions (routes, schedules, hours of service, etc.).

3. Removal of Subjective Factors which contribute to Accidents, by: (a) selection; (b) training, and (c) supervision.

4. Incentives—to create a desire, in mind of the driver, to drive defensively. This is done by: (a) safe driver awards; (b) cash bonuses; (c) contests, including individual and group competition; and (d) personal recognition for outstanding achievements.

Driver Training

BECAUSE we believe that our Driver Training Program is one of the more interesting and unusual

IT DOES NOT ROLL BY ACCIDENT

am McLean Style

of our activities, I should like to start with that one and then sum up briefly some of the other activities which comprise a part of our Accident Prevention Program.

Recently a study made by our company, in cooperation with the Psychology Department of North Carolina State College, revealed the rather amazing fact that 75 per cent of all of our highway accidents involved drivers during their first seven and one-half months of employment. Thus, we set out to very carefully and very forcefully supervise this initial but rather extended early employment period.

Basically, the Driver Training Program separates into four distinct phases. The first of these is a two-weeks' Driver Training School for all new driver employees. This is conducted at our Home Office in Winston-Salem and consists of classroom activities in the morning part of the day and actual driving practice in the afternoon. The accompanying chart shows the basic schedule of this two-weeks' Driver Training School, and the reader may be assured that it covers virtually every phase of in-

(TURN TO PAGE 114, PLEASE)

Classroom Schedule

Hour / Day	8:30-9:30	9:30-10:30	10:30-11:30
	First Week		
Monday	Registration, Welcome and Orientation	Outline of Course History	Employee Benefits
Tuesday	Accident Investigation and Reporting	Review of Hook-Up and Inspection	Driver Qualifications, Rating Scale and Skill Exercises
Wednesday	Accident Investigation and Reporting	Customer and Public Relations	Training Films
Thursday	Accident Investigation and Reporting	ICC Regulations	ICC Regulations
Friday	Accident Investigation and Reporting	Maintenance	Training Films
	Second Week		
Monday	Organizational Chart	Sample Logs	Testing
Tuesday	Testing	Supervisory Aids	Supervisory Aids
Wednesday	Testing	Testing	Insurance
Thursday	Testing	Freight Documents	Stopping Distances and Penalty Pay
Friday	Personal Conduct	Psychophysical Testing	Final Test

Driver training starts with two weeks of school with classes in the morning as scheduled above and actual driving practice in the afternoon. Below is first page of comprehensive driver job application

McLean Trucking Company

WINSTON SALEM, NORTH CAROLINA

APPLICATION FOR EMPLOYMENT

Position applied for _____ Date _____

Name _____ (First) (Middle) (Last) (Social Security No.)

Present address _____ (Number) (Street) (City) (State)

How long at this address _____ Telephone No. _____

Previous address _____ (Number) (Street) (City) (State) (How long there)

Name of nearest relative _____ (First) (Middle) (Last) (Relationship)

Address of relative _____ (Number) (Street) (City) (State)

Date of birth _____ (Month) (Day) (Year) Place of birth _____ (City) (State)

Height _____ (Ft.) (Inches) Weight _____ (Lbs.) Complexion _____

Physical handicaps _____ Identifying marks _____

What is condition of your health _____ (Good) (Fair) (Poor)

When last under care of physician? _____

Physician's name _____ Address _____

Nature of illness or injury _____

How much time have you lost from work in past 2 years? _____

Are you drawing any disability benefits? _____ If yes, explain _____

Nationality of parents _____ (American) (German) (Hebrew) (Irish) (Scotch) (Other)

Marital status: Single _____ Married _____ Divorced _____ Separated _____

Dependants: No. of children _____ Ages _____ Others _____

Members of family living in your household? _____

DETERMINING UNSAFE DRIVERS

—Before the Accident

Taking a tip from the Air Force, here is a way to predict accident-prone driver applicants or veteran drivers before they have a chance to pile one up

By Harold Brandaleone

M.D., Med. ScD., F.A.C.P.
Medical Director, Third Ave. Transit System and United Parcel Service, New York City

ACCIDENT - PRONENESS is a very complex problem. The factors which make a driver or driver applicant susceptible to accidents may differ from person to person. Identification of the accident-repeater is equally complicated.

But because of the importance of the driver in accident prevention, some method must be found to determine safe and unsafe drivers other than the costly way of experience. A report from the American Institute for Research says, "The increasing role of highway accidents in the accident picture tends to highlight the driver as an accident source."

However, according to this report there is no single characteristic of drivers that shows a close relationship to accident frequency. This has also been the finding in our own fleet studies. We have, therefore, set up an overall physical and mental examination aimed to help us determine the accident-prone driver before an accident occurs.

In World War II, the U. S. Army Air Force evolved a system of classifying candidates for pilots as a guide to which ones would be selected for training. This system of classification is called a Profile.

We have recently revised this Profile for the classification of bus and motor vehicle operators. This Transit Profile, as reproduced above, should help us (1) predict the ability of a driver applicant to drive safely and (2) predict, in our regular re-examination of drivers, conditions that may lead to accidents in the future.

The Transit Profile

THE Transit Profile results from the grading of six different examinations as follows:

Dr. Brandaleone, left, is congratulated by Surface Transportation Co. Executive Director James Hodes for his part in winning aTa's 1951 Safety Award

THIRD AVENUE TRANSIT SYSTEM

Medical Department

PROFILE CLASSIFICATION

DATE	PROFILE RATING P PHYSICAL CAPACITY	O ORGANIC DEFECTS	H HEARING	E EYESIGHT	N NEURO-PSYCHIATRIC	D MOTOR ABILITY	CLASSIFICATION Examiner	Cond. For.	Cond. Pers.

PROFILE CLASS	—P— PHYSICAL CAPACITY OR STAMINA	—O— ORGANIC DEFECTS	—H— HEARING — EARS	—E— VISION — EYES	—N— NEUROPSYCHIATRIC	—D— MOTORABILITY GRADE
1	Able to perform maximum sustained effort over extremely long periods.	SEE	Auditory acuity:—soft whisper audible each ear at 2 feet. Audiometric:—0-20 decibels loss. Organic defect:—none.	Visual acuity:—20/20 in each eye uncorrected Organic defect:—none	No psychiatric disorder	91 — 100
2	Able to perform sustained effort over long periods.	DETAILED	Auditory acuity:—loud whisper audible each ear at 2 feet. Audiometric:—25-35 decibel loss. Organic defect:—no active or progressive organic disease.	Visual acuity:— 20/40 correctable to 20/30 in each eye 20/100 in one eye correctable to 20/30. (Provided defective vision is not due to active or progressive organic disease.) Organic defect:—Mild superficial infection of lids.	Mild transient psychoneurotic reaction. Mild character and behavior disorders. Borderline mental deficiency.	71 — 90
3	Able to perform sustained effort for moderate periods.	LIST OF ORGANIC DEFCTS	Auditory acuity:—normal spoken voice audible each ear at 2 feet. Audiometric:—40-50 decibel loss. Organic defect:—acute non-progressive organic disease.	Visual acuity:— 20/60 not correctable 20/100 in one eye plus 20/50 in other, both eyes correctable to 20/40. (Provided defective vision is not due to active or progressive organic disease.) Organic defect:—Astigmatism or muscle imbalance correctable	Mild chronic psychoneurosis. Moderate transient psychoneurotic reaction. Mental deficiency, mild degree.	65 — 70
4	Below minimum standards for employment.		Auditory acuity:—loud voice audible each ear at 2 feet. Audiometric:—above 50 decibel loss. Organic defect:— Acute or chronic suppurative otitis media. Perforation of membrana tympani Severe fungus or other severe chronic infection of the external auditory canal Chronic Mastoiditis.	Visual acuity:—below above standards. Organic defect:— Any severe active or chronic progressive disease of the eye. Marked muscle imbalance and/or astigmatism. Marked nystagmus. Diplopia Impaired depth perception, glare resistance or peripheral vision. Severe color blindness.	Psychosis. Moderate severe chronic psychoneurosis. Severe transient psychoneurosis (Situational). Marked degrees of character and behavior disorders. Marked mental deficiency.	Less Than 65
FACTORS TO BE CONSIDERED	Age, build, strength, stamina, height, weight, agility, energy, muscular coordination and functions.	Severity in relation to job.	Auditory acuity and organic defects of the ears.	Visual acuity, and organic defects of the eyes and lids. Special vision tests: Telebinocular Depth perception Glare resistance Peripheral vision Color blind tests—Ishihara	Type, severity, and duration of the psychiatric symptoms or disorder existing at the time the profile is determined. Amount of external precipitating stress. Predisposition as determined by the basic personality makeup, intelligence, performance, and history of past psychiatric disorders. Impairment of functional capacity Psychological tests.	American Transit Association Motorability Test

1. Physical Capacity or Stamina.
2. Organic Defects.
3. Hearing—Ears.
4. Vision—Eyes.
5. Neuropsychiatric.
6. Motorability Grade.

The first five examinations are done by a physician to determine the physical or mental condition of the driver applicant or the veteran driver. Grading of each examination, discussed in detail below, is done by the examining physician in line with the standards outlined on the Profile chart.

The neuropsychiatric examination investigates the applicant's or driver's personality, makeup and intelligence and other mental factors. Purpose of this exam is to discover any neurosis (nervous disorders or diseases) or psychosis (severe mental disorder).

The sixth examination is the American Transit Assn.'s Motorability Test. This test has been designed to estimate an applicant's or driver's potential ability to do a satisfactory driving job. The test measures teachability, learning capacity, attention qualities, reaction qualities and volitional control. Test equipment includes an instructor's control panel, a model driver's seat, steering wheel, foot pedals and gear shift lever, and a set of signal lights. It takes 45 min.

Grading the Profile

EACH of the six different examinations are graded 1 through 4. These numbers correspond roughly to 1—excellent, 2—good, 3—fair and 4—poor. As each examination is completed, the grade is marked in the box provided in the upper right hand corner of the chart.

From these six different grades, a final classification is decided and placed in the far right column of the box. This final grade is not a mathematical average of the six examination grades but it is a carefully con-

(TURN TO NEXT PAGE, PLEASE)

The Record Continues . . .

In its February 1951 issue, Commercial Car Journal reported on an urban transit bus fleet accident prevention program that had sliced the fleet's accidents 43.2 percent—from 10,425 in 1947 to 5917 in 1950. Said the authors at that time, "We are determined to continue reducing the number of accidents." An important part of that program, the medical aspects, warranted further discussion, so in the July issue of the same year, Dr. Brandaleone and his assistant, Dr. G. J. Friedman, described how the company's Medical Department contributed to the decreased accident rate.

Since then two more years have gone by. Third Avenue Transit won the American Transit Assn. Safety award in 1951 and was given honorable mention in 1952. Charts on next page show how company has continued to reduce accidents despite the fact that its buses operate in one of the most traffic-crowded areas in the United States. Reported Dr. Brandaleone at the recent Pennsylvania Motor Truck Assn. Annual Meeting, "If we remember that in every bus accident one to 50 persons might be injured. If we estimate $500 as average for each claim, and we remember that we have reduced accidents by over 2000 a year (Based on the annual number of accidents before the program went into effect . . . Ed.) it can be estimated that our savings run into the millions."

Determining Unsafe Drivers . . .

Continued from Page 69

sidered total arrived at by the examining physician after evaluating the entire profile.

While two or more grade 3's might not disqualify a driver applicant or veteran driver, they also may. A grade of 3 in two different examinations for physically related reasons would probably disqualify a candidate. For example:

An older driver with a grade of 3 in the second examination (Organic Defects) because of abnormally high blood pressure and hardening of the arteries would be disqualified if he also was given a grade of 3 in the Eye examination (Number 4). The organic defect in this case would be likely to contribute to further visual deficiency with a resulting decrease in safe driving ability.

Note: If a grade of 4 is given an applicant by the examining physician in any *one* of the six tests, the candidate is not considered a safe driver.

Is It Valid?

IN AN effort to judge the value of the Profile system of classification, we compared two groups of bus drivers.

Four years ago, we transferred a group of operators from trolley to bus operation. At that time there were 12 of the group who were permitted to drive a bus without approval of the Medical Department.

Recently, we re-examined the entire group using the Profile classification. The group of 12 still did not qualify as bus drivers. Another group of 60 operators, who had been approved by the Medical Department at the time of the transfer, received passing grades in their profiles.

Then we studied the accident rates of these two groups for the four year period. Only accidents considered under the driver's control were included.

It was found that the group of 60 drivers who had qualified under the Profile classification had 2.07 accidents per man per year. The group of 12, classed as unfit under the Profile system, had 2.97 accidents per man per year.

In other words, drivers who failed to pass the Profile classification had almost one more accident per man per year than the drivers shown as qualified under the Profile system. By actual percentage calculation, the unqualified group had 43.5 per cent more accidents per man than the qualified group.

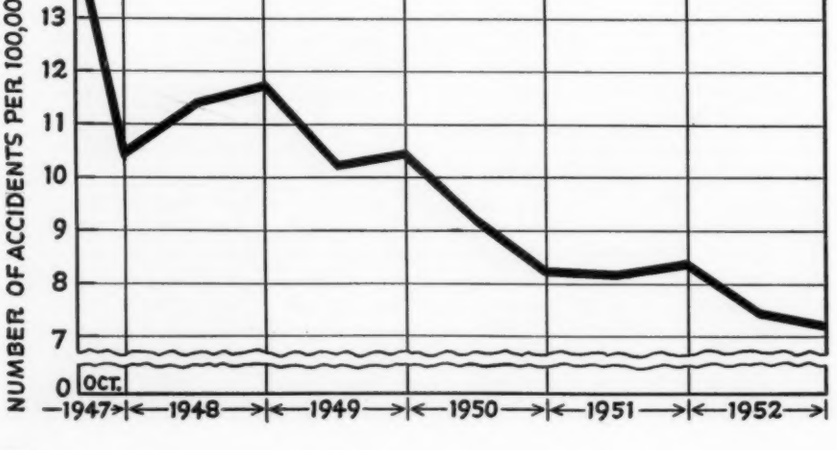
This data, although it utilizes a small number of cases, is significant. It reveals that good careful medical examination, classified according to the Profile system, can be an important means of predetermining the ability of an operator to drive safely. And the test is equally valid when measuring a new applicant or a regular driver. However, for practical purposes, a veteran operator must be given some special consideration.

(TURN TO PAGE 148, PLEASE)

Accidents Over Which Operator Had Control

	1946	1947	1948	1949	1950	1951	1952
Vehicle Collision	5270	5244	4088	3211	2867	2629	2157
Thrown in Car or Bus	581	688	607	691	555	587	550
Struck by Car or Bus	386	273	247	186	131	122	113
Intra Company Collisions	91	103	62	54	27	29	13
Totals	6328	6308	5004	4142	3580	3367	2833

Bus Accident Rate



Here Is How The Record Looks

Left, Above. Analysis of accidents over which driver had control shows a steady decline in all classifications compared to 1946, last full year before company's safety program started.

Left, Below. Graph shows total accident rate for Surface Transportation System buses has dropped over 50 per cent in the five years since Oct. 1947.

Below. Medical department expenses have dropped along with accidents. Savings were almost 30 per cent last year.

Medical Dept. Costs

Year	Cost	Per Cent of 1946
1946	$256,425	100.0
7/47–7/48*	199,439	77.8
1948	199,922	78.0
1949	200,120	78.0
1950	177,246	69.1
1951	192,906	75.2
1952	181,599	70.8

*** First full year following reorganization of Medical Department.**

How to Save Time in DYNAMOMETER TESTS

By Al Mansis
Shop Foreman, Cummins Diesel Engines, Inc.
Philadelphia

Shop built equipment, power tools cut set-up time from 4½ hours to 45 minute

A FEW people these days will question the value of an engine dynamometer as a means of running in new or rebuilt engines and as a means for checking for peak performance efficiency. In our shop, however, we seriously questioned the time involved in mounting an engine to the dynamometer and getting it ready for operation. For us the problem was much greater because, as a Cummins dealer, we handle as many as 83 different engine models in our routine work. It took an average of 4½ hours to set up the equipment before we really could start our dynamometer test.

We attacked the problem by using the special fixtures shown in the accompanying illustrations, along with readily available connections for exhaust and water supply, and ended with a method whereby it is routine to take no more than 45 minutes to have the engine ready for test.

Three Main Steps

THE first step consists of the removal of lugs which hold the flywheel to the crankshaft (Fig. 1). There is no problem that the flywheel will come loose because press-fit pins hold it in position.

Next, we attach a special adaptor drive which we made up in the shop from some pipe stock and two flanges (Fig. 2). This, of course, requires studs which are longer than standard and these studs are kept in a special tray on the dynamometer. Incidentally, after the accompanying pictures were taken, we further shortened the time required for the process by leaving this adaptor drive attached to the universal joint on the dynamometer.

(TURN TO PAGE 148, PLEASE)

Fig. 1. First step in readying engine for dynamometer test is removal of flywheel studs. An air wrench speeds the job

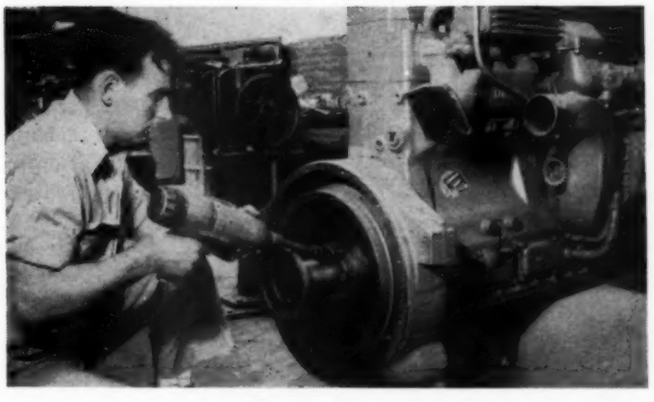
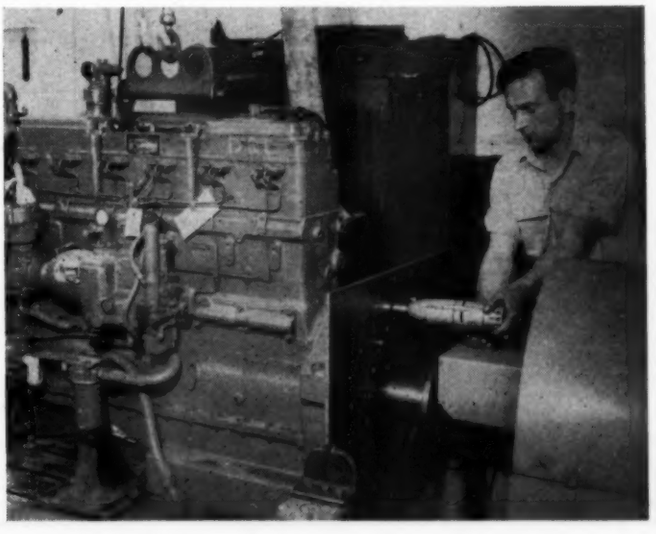


Fig. 2. Shop-made coupler is then attached to flywheel. This can be left fastened to dynamometer's universal joint

Fig. 3. When engine is placed in position for test, rear is fastened to special plate drilled for various housing sizes



How Long Should Trucks Run?

Two, three or ten years old, new approach to an old problem suggests operating costs remain about the same

By Howard Willet, Jr.
Willet Co., Chicago

WAS MAINTENANCE men we all know that we can run a truck as long as we have to. We know that sometimes the only original part on the truck is its company number. In the fact of certain circumstances we have run trucks long past their period of economic usefulness, sometimes on purpose, sometimes by error. Sometimes we are forced to make costly repairs to a truck when we well know we shouldn't.

If we knew in advance when a truck was scheduled to go out of service, we could save a lot of time and worry and money in the maintenance of that vehicle; further,

Adopted from a paper presented at the SAE West Coast Meeting

Fig. 1. Basis For Depreciation

Model Year	Factory Price at Time of Manufacture	Average Cash Value as of April 1953	Ratio of Cash Value to Factory Price
½-Ton Panel			
1952	$1620	$985	60%
1951	1618	850	52%
1950	1440	660	46%
1949	1450	600	42%
1948	1377	500	34%
1947	1238	415	33%
1946	1015	295	29%
1945		not available	
1944		not available	
1943		not available	
1942	748	155	21%
1941	686	135	20%
1½-Ton Chassis and Cab			
1952	$1621	$1005	61%
1951	1634	875	53%
1950	1420	680	48%
1949	1552	620	40%
1948	1613	565	35%
1947	1503	480	32%
1946	1365	380	28%
1945	985	265	27%
1944	785	175	22%
1943		not available	
1942	825	175	21%
1941	737	135	18%
Medium Tractor			
1952	$2730	$1655	60%
1951	2730	1400	51%
1950	2687	1215	45%
1949	2766	1085	40%
1948	2491	845	34%
1947	2440	680	27%
1946	1894	485	25%
1945	1694	430	25%
1944	1657	400	24%
1943		not available	
1942	1595	375	23%
1941	1478	315	21%
Heavy Tractor			
1952	$6083	$3565	58.5%
1951	5685	2900	51%
1950	5387	2465	46%
1949	6388	2465	38%
1948	5813	1935	33%
1947	5466	1490	27%
1946	4655	1105	24%
1945	4459	1025	23%
1944	4463	955	21%
1943		not available	
1942	4463	895	20%
1941	4110	660	16%

Fig. 2. Operating Costs

Year of Operation	@ 10,000 Miles per Year		@ 20,000 Miles per Year	
	Per Mile	Per Year	Per Mile	Per Year
½-Ton Panel				
1st	6.5¢	$650	5.5¢	$1100
2nd	8.5¢	850	7.5¢	1500
3rd	9.5¢	950	8.5¢	1700
4th	10.5¢	1050	9.5¢	1900
5th	11.5¢	1150	10.5¢	2100
6th	12.5¢	1250	11.5¢	2300
1½-Ton Chassis and Cab				
1st	8¢	$800	6¢	$1200
2nd	10¢	1000	8¢	1600
3rd	11¢	1100	9¢	1800
4th	12¢	1200	10¢	2000
5th	13¢	1300	11¢	2200
6th	14¢	1400	12¢	2400
Medium Tractor				
1st	11.5¢	$1150	9¢	$1800
2nd	15¢	1500	11.5¢	2300
3rd	18¢	1800	13¢	2600
4th	21¢	2100	14.5¢	2900
5th	24¢	2400	16¢	3200
6th	27¢	2700	17.5¢	3500
Heavy Tractor				
1st	14¢	$1400	11¢	$2200
2nd	17.5¢	1750	13.5¢	2700
3rd	20.5¢	2050	15.5¢	3100
4th	23.5¢	2350	16.5¢	3300
5th	26.5¢	2650	18.5¢	3700
6th	29.5¢	2950	20.0¢	4000

Meeting

if we know what was the best time on the average to sell or trade the vehicle, we could make up a replacement schedule a year in advance and thus synchronize our buying, selling and maintenance of the fleet. In my opinion it is this synchronizing which will produce the most economy.

How can synchronization be accomplished? This question requires answers to the following questions: How long should you run a truck to get the lowest combined depreciation and maintenance cost? What are the various items that go to produce these costs? Which items are affected by time and which are not?

Although there is room for argument, for the purpose of this discussion we'll assume that the following cost items do not vary with the age of the truck: license, storage, insurance, driver's wages and tire depreciation. On this assumption we'll eliminate these items from further consideration in this discussion.

The next items are the ones we're really interested in because they vary with the age of the truck and play an important part in determining how long we are going to run it.

Depreciation. The longer we run a truck, the less depreciation we have per year. Conversely, the shorter the time we run the truck the higher the depreciation cost per year. There are two kinds of depreciation, book and actual, the actual being determined by the market value of the vehicle at any given time. In this discussion we refer to the actual depreciation as established by market values of trucks.

Maintenance labor and parts. These items increases as the truck grows older. A five-year-old truck costs more to maintain than a one-year-old truck does. As this type of cost is generally considered in mileage figures we will take mileage figures and convert to yearly costs.

Gasoline and oil. These items are controversial. If a truck is properly

(TURN TO PAGE 136, PLEASE)

Fig. 3. Total Variable Costs

Years Operated	Miles per Year	Depreciation Expense During Year	Operating Expense During Year	Total Cost Since Purchase	Cost per Year
½-Ton Panel—Original Cost—$1600					
1	10,000	$640 (40%)	$650	$1290	$1290
	20,000	640	1100	1740	1740
2	10,000	128 (8%)	850	2268	1134
	20,000	128	1500	3368	1684
3	10,000	80 (5%)	950	3298	1099
	20,000	80	1700	5148	1716
4	10,000	112 (7%)	1050	4460	1115
	20,000	112	1900	7160	1790
5	10,000	96 (6%)	1150	5706	1141
	20,000	96	2100	9356	1871
6	10,000	64 (4%)	1250	7020	1170
	20,000	64	2300	11720	1953
7	10,000	64	1250	8334	1191
	20,000	64	2300	14084	2012
8	10,000	32 (2%)	1250	9616	1202
	20,000	32	2300	16416	2052
9	10,000	32	1250	10698	1211
	20,000	32	2300	18748	2083
10	10,000	32	1250	12180	1218
	20,000	32	2300	21080	2108
1½-Ton Chassis and Cab—Original Cost—$1600					
1	10,000	640 (40%)	800	1440	1440
	20,000	640	1200	1840	1840
2	10,000	128 (8%)	1000	2568	1284
	20,000	128	1600	3568	1784
3	10,000	80 (5%)	1100	3748	1249
	20,000	80	1800	5448	1816
4	10,000	112 (7%)	1200	5060	1265
	20,000	112	2000	7560	1890
5	10,000	96 (6%)	1300	6456	1291
	20,000	96	2200	9856	1971
6	10,000	64 (4%)	1400	7920	1320
	20,000	64	2400	12320	2053
7	10,000	64	1400	9284	1341
	20,000	64	2400	14784	2112
8	10,000	32 (2%)	1400	10816	1352
	20,000	32	2400	17216	2152
9	10,000	32	1400	12248	1360
	20,000	32	2400	19648	2183
10	10,000	32	1400	13680	1368
	20,000	32	2400	22080	2208
Medium Tractor—Original Cost—$2700					
1	10,000	1080 (40%)	1150	2230	2230
	20,000	1080	1800	2880	2880
2	10,000	216 (8%)	1500	3946	1973
	20,000	216	2300	5398	2698
3	10,000	135 (5%)	1800	5881	1960
	20,000	135	2600	8131	2710
4	10,000	189 (7%)	2100	8170	2043
	20,000	189	2900	11220	2805
5	10,000	162 (6%)	2400	10732	2146
	20,000	162	3200	14582	2916
6	10,000	108 (4%)	2700	13540	2257
	20,000	108	3500	18190	3032
7	10,000	108	2700	16348	2338
	20,000	108	3500	21798	3114
8	10,000	54 (2%)	2700	19102	2388
	20,000	54	3500	25352	3169
9	10,000	54	2700	21856	2428
	20,000	54	3500	28906	3212
10	10,000	54	2700	24610	2461
	20,000	54	3500	32460	3246
Heavy Tractor—Original Cost—$6000					
1	10,000	2400 (40%)	1400	3800	3800
	20,000	2400	2200	4600	4600
2	10,000	480 (8%)	1750	6030	3015
	20,000	480	2700	7780	3890
3	10,000	300 (5%)	2050	8380	2793
	20,000	300	3100	11180	3727
4	10,000	420 (7%)	2350	11150	2788
	20,000	420	3300	14900	3725

Chart completed on Page 138

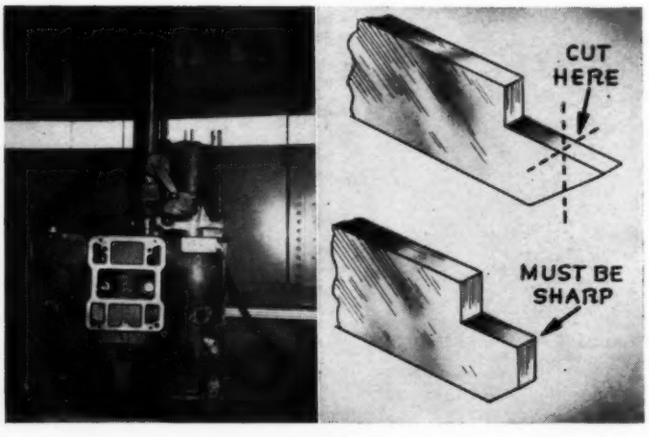
Shop Hints

Here are some swell time savers for fleet shops. Let us have your ideas for new tools or short cuts to service. We'll pay $10 and $25 for good ones.

$25

To Fix Liner Protrusion

By Bruce A. Crawford
Supt of Maintenance, Portland Stages, Inc.
Gresham, Ore.



Here is a procedure to re-establish the counter bore protrusion dimension on the GM 4-71 diesel engine cylinder block. Refacing or remachining the top of the block reduces the counter bore depth which would cause the cylinder liner to protrude above the block more than factory recommendations of .002 to .006 in.

To re-establish the correct dimension, I use a Van Norman cylinder boring bar set-up as if a block were to be bored out. By regrinding the tool as illustrated, I can obtain a perfect seat for the liners. Care must be taken when sharpening the tool so as to obtain a cutting edge parallel to the body of the bit holder.

With tool in place, tighten the spindle just enough so that you can tap the feed handle by hand to gage your feed. Usually you have to remove only from .004 to .006 in.

In order to measure depth with the boring bar in position, I cut ½ in. off the top of an old cylinder liner. After making a trial cut, I insert the trial sleeve in the hole and use a straight edge across the block. With a feeler ribbon, I measure how much the liner protrudes above the block.

I have had success in counter-boring until the liner protrudes .004 in. above the block. When the head is bolted down into place, it will squash up about .001 to .0015 in. which will leave an ideal protrusion dimension—in accordance with factory recommendations — of .002 in.

Jig Makes Easy Remov[al of] Drill Chu[cks]

By Frank P. Coulomb
Inglewood, Cal.

Take a 2 by 2-in. square block, 6 in. long and drill two holes through it using a 21/32-in. drill. After marking a line 5/8 in. from the left on the top and ½ in. from the right on the bottom, cut the block in two parts diagonally between these two lines as illustrated. Cut out the wedge section so that it has a center gap as shown ¾-in. wide. Cut the holder section al[ong] a gap fr[om] 1/8 in. Fil[e] after cut[ting] holder se[at] Striking w[ith] with hea[vy] chuck. Thi[s] Jacobs C[hu]ck with large[r]

Screwdriver Removes P[ole] Shoe Scr[ews]

By Jack Gibson
Gibson's Associates Eng. Co.
Fort Wayne, Ind.

We used to have a lot of trouble with pole shoe screws in starters and generators. We often burred or otherwise damaged them in removal. Since we [have] which is d[one] press and[,] we have [a]

Jack and Removable [Axle] Support

By George C. Favinger
State Roads Commission
Easton, Md.

This jig was made for easy removal and installation of truck, heavy-duty, two-speed differential assemblies into the rear axle housing. It fastens to the jack head with a ⅜-in. bolt. Jack head has been drilled an[d] of the jig 12 by 1[2] brackets plate. T[he] curved to[p]

Twist Shank to Rest[ore] Drooping [Door Handles]

By Stanley Clark
East Bradenton, Fla.

When drooping door handles are not the result of defective latch mechanism, they can be often returned to trim and neat appearance. First determine how much the handle falls below the center line of the shaft. N[ext] handle, h[old] the squar[e] When sof[t] recover [the] cold wat[er]

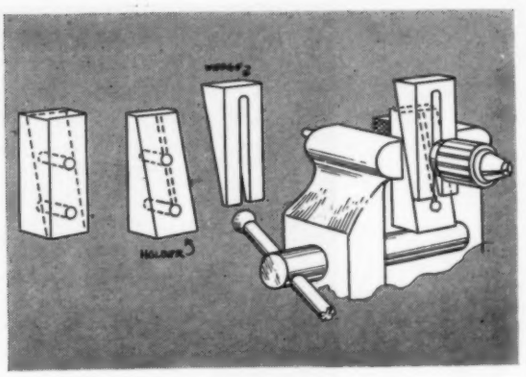
Broken Wrenches Can Be Adapted [for Use]

By A. M. Valencia
Huntington Park, Cal.

Here are two uses for broken wrenches. A low cost, open-end wrench can be converted to a crows foot if one of the jaws breaks. Drill a 25/64-in. hole about 9/16-in. back from the rear of the opening and file out the four corners to form a square. T[he] A box into a [1] grinding ing on th[e] over. It [is] or air lin[e]

Remov Drill Chucks from Shanks

$10



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er gap a
the holder

section along dotted lines to give it a gap from top to bottom hole of 1/8 in. File or grind surfaces smooth after cutting. Place drill shank in holder section and squeeze in vise. Striking wedge a good sharp blow with heavy hammer will remove chuck. This has been cut for a No. 34 Jacobs Chuck 1/2 in. Use same tool with larger holes for larger chucks.

oves P hoe Screws in Generator

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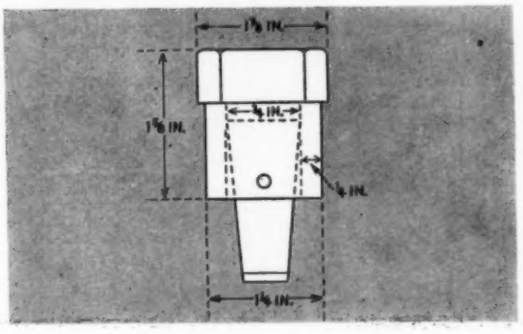

. Co.

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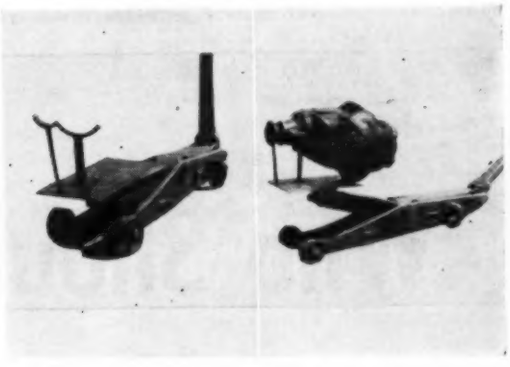
Since we developed this screwdriver, which is designed for use in an arbor press and is turned with a wrench, we have had no trouble.

ovable Support Differential

$10



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r easy re-
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differential
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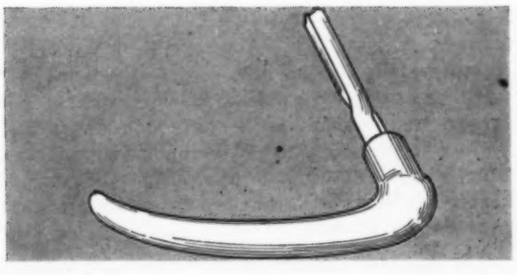
has been

drilled and tapped for this bolt. Base of the jig is 1/4-in. iron plate about 12 by 18 in. The two supporting brackets are welded to this base plate. Tops of the bracket are curved to hold differential.

o Resto ooping Door Handles

$10



a.

handles are
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the handle
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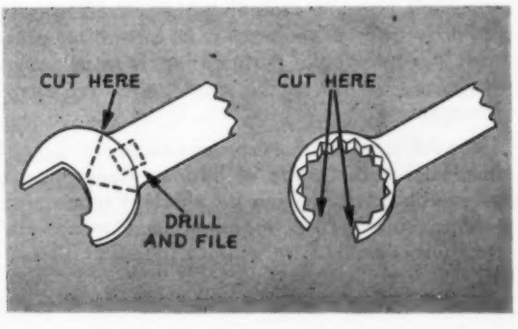
shaft. Next step is to remove the handle, hold it in a vise and heat the square shaft close to the handle. When soft, bend the shaft enough to recover the droop and quench in cold water to restore the temper.

nes Can apted for Other Uses

$10



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Cal.

for broken
open-end
to a crows
breaks. Drill
/16-in. back
pening and
to form a

square. This gives a 3/8-in crow's foot.

A box wrench can be changed into a line breaker by cutting or grinding out a small section, depending on the size line you want it to fit over. It comes in very handy on fuel or air line connections.

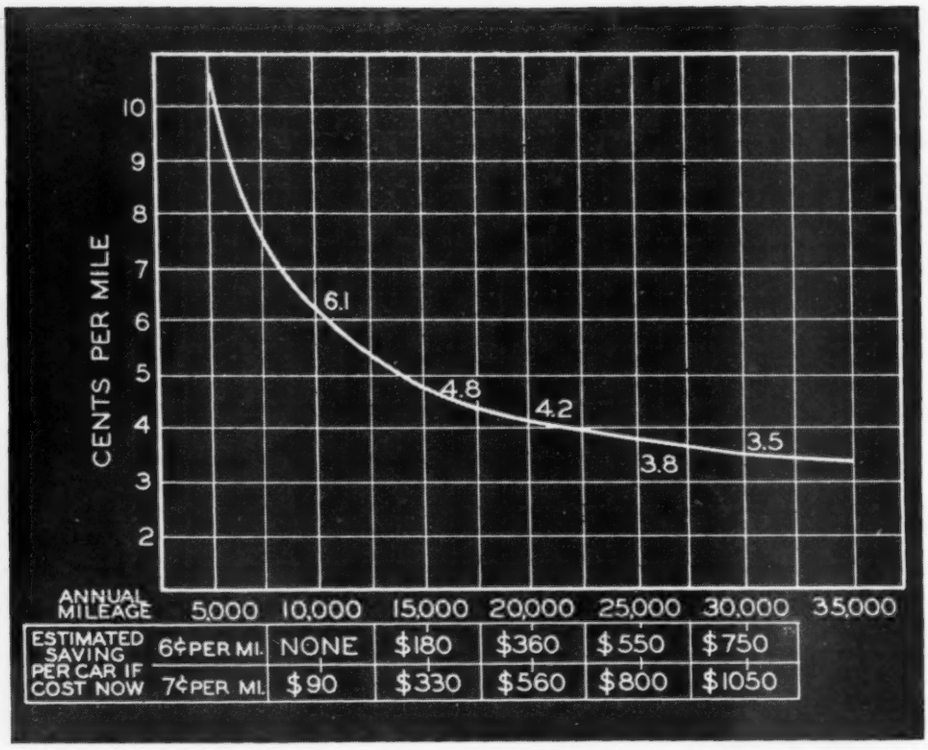


Chart indicates how operating costs per mile decrease as total annual mileage increases. Two lines below show how much company fleet ownership might save at various annual mileages when compared to paying salesmen a fixed mileage allowance

Who Should Own Your Sales Fle

Here is the second of a series of articles on the use of passenger cars for business purposes. The first article, (CCJ, Aug. p. 72) presented the findings of a study conducted by Dartnell Corp. into various phases of sales fleet operating practice. Here Author Samuel J. Lee discusses various methods of supplying automotive transportation for salesmen, considers the claims, advantages and problems of each.

For fleetmen concerned with providing efficient, economic business transportation, regardless of the method now being used, the following article presents some thought-provoking opinions by a recognized authority on the subject. It is based on excerpts from Mr. Lee's newly revised book "Automotive Transportation in Industry,"* now recognized as one of the most useful guides to effective sales fleet management.

In addition to the material presented here, Mr. Lee's book provides further discussion of business fleet operating practices including valuable information on efficient management, effective record systems, preventive maintenance, public relations and safety programs.

For most national fleets company ownership is best, leasing and employee ownership trail. Choice of most efficient method is factor in lowering total sales costs

By Samuel J. Lee

* Lloyd R. Wolfe, Publisher, 111 West Washington St., Chicago 2, Ill. ($7.50)

Annual Mileage	Annual Leasing Cost					Annual Salesman Owned Cost			Annual Savings per Car Under Leasing Compared to Mileage Allowances		
	Annual Flat Rental	Gasoline (.0159¢ per mile)	Oil and Changes (.35¢ per qt)	Total Annual Cost	Approx. Cost per Mile	Allowance per Mile					
						8¢	7¢	6¢	8¢	7¢	6¢
40,000	$900	$636	$37.27	$1573.27	$.0393	$3200	$2800	$2400	$1626.73	$1226.73	$826.73
38,000	900	604	35.35	1539.35	.0405	3040	2660	2280	1500.65	1120.65	740.65
35,000	900	557	32.55	1489.55	.0426	2800	2450	2100	1310.45	960.45	610.45
32,000	900	509	29.75	1438.75	.0450	2560	2240	1920	1121.25	801.25	481.25
30,000	900	477	28.00	1405.00	.0468	2400	2100	1800	995.00	695.00	395.00
28,000	900	445	26.07	1371.07	.0490	2240	1960	1680	868.93	588.93	308.93
25,000	900	398	23.27	1321.27	.0528	2000	1750	1500	678.73	428.73	178.73
23,000	900	366	21.35	1287.35	.0560	1840	1610	1380	552.65	322.65	92.65
20,000	900	318	18.55	1236.55	.0618	1600	1400	1200	363.45	163.45	.....
18,000	900	286	16.80	1202.80	.0668	1440	1260	1080	237.20	57.20	.....
17,000	906	270	15.75	1185.75	.0698	1360	1190	1020	174.25	4.25	.....

Cost of leasing as compared to fixed mileage allowance shows savings under leasing increase as annual mileage increases. This chart and one at left provide a way for companies to analyze data, decide best method for their use.

les Fleet?

NEXT to salesmen's salaries, automotive expense is probably the largest single item of expenditure incurred in sales activities each year. When variations of two to three cents per mile are shown in automotive operating costs by two different companies handling the same type of product in the same manner and covering exactly the same territories, it becomes apparent that some companies spend money needlessly with no increase in efficiency of operation. Because cars in sales work average 20,000 miles annually, this added cost can amount to more than $400 per year for each vehicle.

By what may appear to be a strange paradox, the efficiency and safety of automotive equipment will be found to increase as the cost per mile of fleet operation goes down. The reason for this is that costs can only be brought down by good fleet management, and a well-controlled fleet operation will make for safer and more efficient motor equipment.

The relative merits of the various systems under which industry makes use of automotive equipment for business purposes are at present the subject of much controversy. To enable the reader to intelligently determine which of the systems is best suited to his particular requirements, this article will discuss each system with its advantages and disadvantages.

Company Ownership

THERE are only two basic methods for providing automotive transportation for a company's sales staff. Either vehicles can be company-owned or they can be leased—either from employees by paying for mileage travelled for business purposes in the salesmen's personal cars, or from an independent leasing organization.

Of these methods, company ownership is the most economical. This is true even in instances where qualified supervision or fleet management is not available. Any company operating its own equipment can obtain transportation at a cost per mile considerably lower than the average salesman-ownership plan, and well below the cost of leasing arrangement.

A survey of many large corporations using company-owned equipment shows that even those companies operating without a well-defined fleet program rarely exceed a cost of 5½ cents per mile, while many concerns exercising good control are able to operate at under 4½ cents per mile. Rarely does a well-managed fleet exceed a cost of five cents per mile.

Regardless of the number of cars involved, it has been proven that economies can be effected by using the company ownership plan. It is for this reason that most large automobile fleet operators in the country use company-owned vehicles.

Company ownership permits greater flexibility than any other form of fleet transportation because a company which owns its fleet is at liberty to change its method of operation at any time. If sales activity must be curtailed, cars can be disposed of immediately and all expense can be brought to a halt. Rapid shifts of sales efforts throughout the country may also be accomplished more readily. If desired, vehicles may be placed in storage and all expenses immediately cease except for the cost of storage. Under any other arrangement, many expenses go on whether or not the car is being used. A company which owns its vehicles can choose the type and design of cars best suited to its needs. This is not practical if employee-owned cars are used and will seriously complicate any leasing arrangement.

For companies which use reciprocity as a means of furthering their own sales activity, company ownership permits applying reciprocity in purchasing equipment and supplies to strengthen its position with customers.

(TURN TO PAGE 150, PLEASE)

When It Gets Cold

CONSIDER AN ENGINE HE

Generally less costly than inside storage, the right kind will save time, reduce

WHEN the temperature drops below freezing, best bet is to put your trucks or buses inside a heated garage. But, that is usually the most expensive way of keeping them in operating condition.

There is another and generally less costly way. Put the heat inside the vehicle with an engine pre-heater.

In many areas you can get by without heating, but, where there are an appreciable number of nights below freezing, you should consider a pre-heater. The right kind, correctly used, saves money by:

1. Increasing starting efficiency.
2. Decreasing maintenance costs.
3. Reducing time delays.

Heater Types

DATA from recently military research in cold starting has been incorporated in newer engine pre-heater models, increasing efficiency and performance. On the market today are the following types:

1. Electric heating element connected to an outside source of current that:
   a. Fastens outside the engine block and connects by a hose to the coolant system for circulation of heated fluid.
   b. Replaces headbolt or freeze plug to heat coolant in the block.
   c. Heats oil in the crankcase.
2. Self-powered, gasoline or diesel fuel burning models that:
   a. Are connected by hose to vari-engine components and the coolant system for circulation of heated fluid.
   b. Are connected by air ducts to various engine components for circulation of heated air.
3. Stationary heating plants that will handle more than one vehicle by means of a pipe and hose system to circulate heated fluid through the engine and, in the case of buses, through the body heating system.

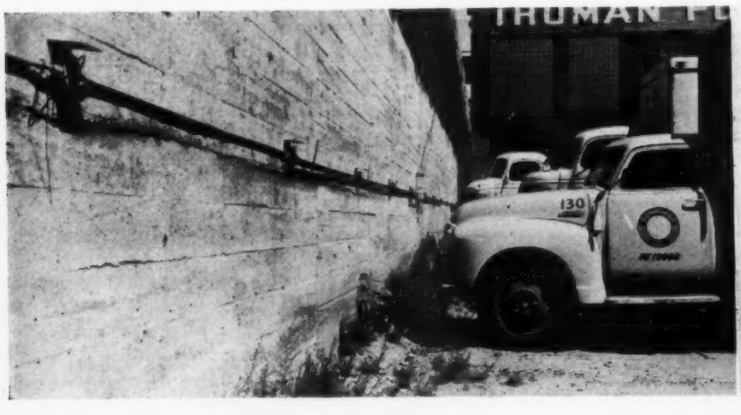
Most popular for the average truck fleet is the type that fastens outside the block and circulates heated coolant through the engine (type 1a above). Typical are the four models offered by Kim Hotstart Mfg. Co. Their capacity and use with recommended engine sizes are as follows:

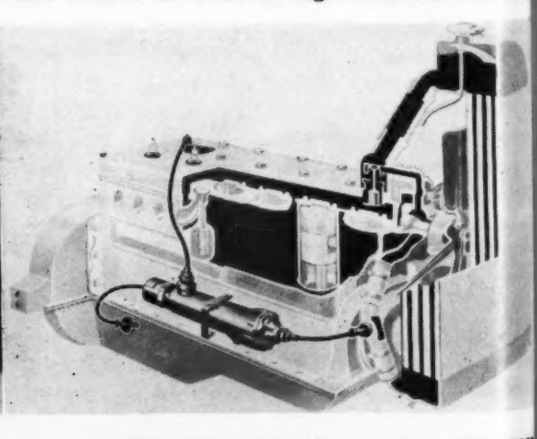
Watts	*Approx. BTU*	*Engine Size*
750	2560	up to 300 cu in.
1000	3413	350 to 600 cu in.
2500	8535	700 to 1200 cu in.
4000	13,652	above 1200 cu in.

In addition to standard 115/120 volt models, they are also available for 230/240 volt operation. For use around easily combustible materials, such as in petroleum tank trucks, the 750 and 1000 watt model can be had with explosion proof caps.

Connection of these units is by hose. Coolant is drawn from the lower radiator hose, heated and returned to the engine through a connection in the top of the block.

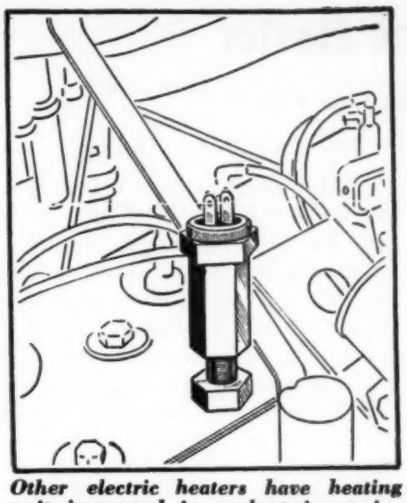
Popular type of engine pre-heater uses an electric heating element connected to outside power line similar to that shown below. Coolant from lower radiator hose is heated and returns to block through connection in top



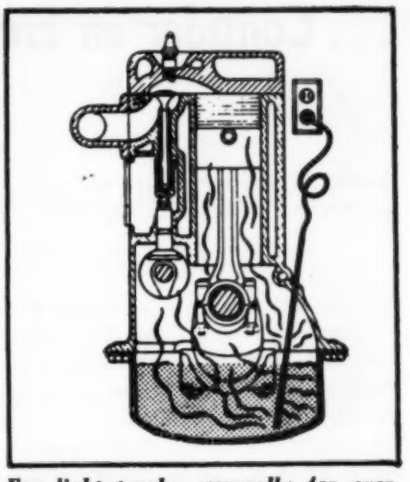


HEATER

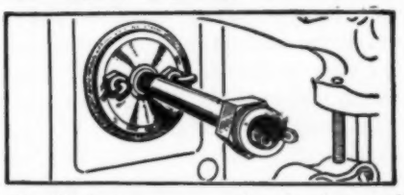
reduce maintenance costs



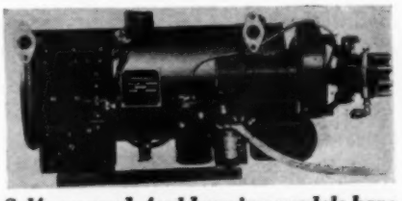
Other electric heaters have heating unit immersed in coolant in engine block, replacing one of the headbolts



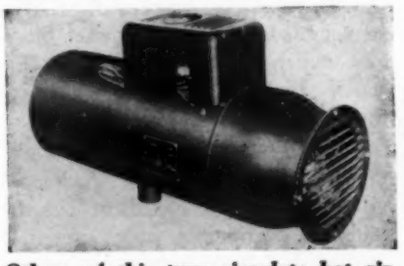
For light trucks, generally for overnight heating, this type of electric unit replace dipstick, heats the oil



Headbolt types can also be inserted in engine block through freeze plug



Self-powered, fuel burning models have hight output. This one heats coolant



Others of this type circulate hot air. Both can be used for interior heating

This portable, fuel burning, hot air model will deliver 60,000 BTU per hr

Another model of this type, made by Phillips Mfg. Co., will fit most engines, has a 1300 watt heating element, producing about 4460 BTU. With this unit, most trucks and tractors will reach operating temperatures within 60 to 120 minutes.

A model of this type made by Five Star Mfg. Co. is the Freeman external engine pre-heater. It has the same wattage and BTU heat output as the Phillips model. It can be connected to the radiator drain petcock in place of the lower radiator hose.

Other types of electric pre-heaters (1b and 1c above) have less capacity and less BTU output, but may be installed easier.

For example, a dipstick model, made by Phillips, is rated at 100 watts, about 340 BTU. It can be inserted in place of a standard dipstick where the hole is at least 5/16-in. diameter and comes in 13 or 20-in. length. The manufacturer recommends all-night operation of this unit, says, ". . . it will take from three to four hours to be really effective in a stone cold engine."

A second type replaces a headbolt or freeze plug depending on manufacturer's recommendations included with the unit. The heating element extends into the coolant in the block. Like all electrical types, except the dipstick model, they need not be removed in normal operation.

A model of this type made by Zaiger Corp. is rated at 400 watts, about 1365 BTU. Zaiger also offers a model equipped with a no-leak collar for insertion in the lower radiator hose.

Phillips' headbolt heater is rated at 650 watts, about 2230 BTU. It may be used for all-night heating or for heating just before starting. According to the manufacturer, 30 to 90 min. should be sufficient except in cases of extreme below zero temperatures.

Five Star's Freeman headbolt heater has the same wattage and heat output as the Phillips model. Heat rise is about 60 deg in the first 60 min. The heater, is used on an overnight basis, will heat a maximum of about 110/120 deg.

For V8 engines, two headbolt heaters are recommended, one on either side.

Manufacturers warn that all engine pre-heaters using electric heating elements must have these elements immersed in the coolant liquid (or crankcase oil in case of the dipstick heater) before they are connected to the current source. Reason is that these elements produce a concentrated high heat that will burn out the element unless it is surrounded by a liquid that will conduct the heat away.

It also goes without saying that adequate, weather-proof electric connections must be provided, and most fleets have put special emphasis on methods for assuring that the truck will not be driven away while still connected. Two methods have been used:

1. Have the plug connected at the front end so, if the truck is backed away, there is a straight line pull that disconnects the unit.

2. Install a warning light on the dash board in the same circuit as the

(TURN TO NEXT PAGE, PLEASE)

. . . Consider an Engine Heater

Continued from Page 79

heater so that it remains on as long as the heater is connected.

Fuel Burners

SECOND major type of engine pre-heater are those that burn gasoline and/or diesel fuel to supply the heat. Frequently these are known as booster heaters. Generally they are of greater heat output than the previously discussed types. By use of piping and water jackets (for the coolant heater types) or hot air ducts (for the hot air types), they can be used to warm the coolant, battery, generator, oil pan, intake manifold, fluid couplings, transmission and other engine components, as well as supply heat for truck cabs, bus interiors and defrosters. They can be used to (1) provide quick heat to raise the engine to operating temperature and (2) maintain a steady engine temperature during stand-by operation.

Fluid Heat Division, Anchor Post Products, Inc., produces both gasoline and diesel fuel burning models. Both have a 75,000 BTU per hr heat output. Fuel consumption is .75 gal per hr with diesel fuel and .90 gal per hr with gasoline. Ampere draw from the vehicle battery is 8.5 for the diesel fuel model and 7.5 for the gasoline model. Dimensions of both units are about 30½ by 20 by 14 in.

An interesting type of this model has been introduced by Swingfire Division, Devenco, Inc. It utilizes the "pulse-jet" principle which powered German V-1 buzz bombs. In operation, a battery-activated glow plug ignites a gasoline and air mixture. Following the first explosions, the battery is disconnected as there is sufficient residual heat to ignite each successive cycle in the "pulse-jet" operation. Heat generated by the explosions (the cycle occurs 80 times a second) warms the coolant which circulates through the engine. Used in conjunction with a heat exchanger, it also will warm bus and truck interiors. Heat output is 20,000 BTU per hr and gasoline consumption is 3/16 gal per hr. Weight is about 14 lb, length 17 5/16 in. and diameter 6 15/32 in. A separate, 1½ gal fuel tank is available.

Still another variation are the coolant heaters made by Perfection Stove Co. They can be installed to utilize exhaust heat from the burner as well as heat engine components with heated coolant. Largest model in Perfection's line of coolant heaters has a maximum heat output of 60,000 BTU per hr and low output of 30,000 BTU. Fuel consumption, gasoline or diesel, ranges from .4 to .8 per hr. Weighing about 32 lb, it measure 11⅝ by 24 by 8 in. Other models of this type available from Perfection are as follows:

BTU output per hr.			
High	9000	12,000	12,000
Low	4000	7000	5000
Fuel consumption gal per hr.			
High	.2	.317	.25
Low	.1	.16	.11
Weight, lb.	16½	16½	19½
Size, in.			
Height	16	15	14¾
Length	10	10	11¼
Width	5½	5½	5½

Perfection also has available models that supply hot air only and are not connected to the coolant system. Larger model of this type has a high heat output per hr of 60,000 BTU and a low output of 30,000 BTU. This model has a fuel consumption of .8 to .4 gal per hr, weighs 28 lb, measures 11⅝ by 24 by 8 in. Smaller model has a high heat output of 30,00 BTU per hr and low output of 18,00 BTU. Fuel consumption is .4 to .2 gal per hr, weight 23 lb, and it mea sures 8 by 18¾ by 6 in.

The company also makes a gasoli or diesel fuel fired portable hot a heater. Easily carried by two me it weighs 114 lb including fuel f five hours of maximum use, measure 19⅞ by 28½ by 13¾ in. Maximu output is 60,000 BTU per hr, low 30,000 BTU per hr. Fuel consum tion ranges from .8 to .4 gal per h A 6-in. outlet is provided to whic can be attached a hose to direct th heat into the engine compartmen cab, body or bus interior. It can als be used for temporary heating shops or garages.

Hot air engine pre-heaters are als available from South Wind Divisio Stewart-Warner Corp. in 20, 30, 5 60, 90, 100, 200, 600 and 700 thou sand BTU per hr capacity. One re ommended method of connecti these heaters permits operation follows:

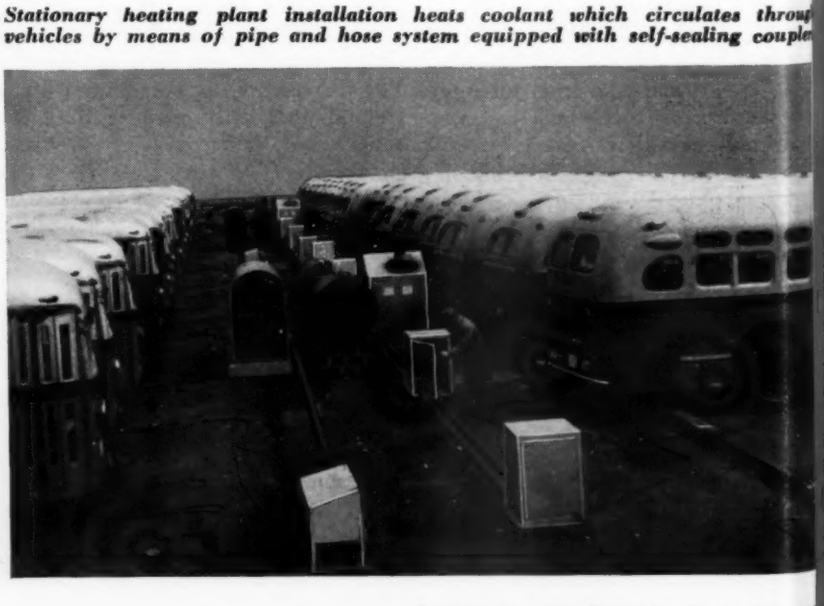
1. Pre-heating — warm air fro heater is (1) circulated around ba tery and (2) introduced into engi block. Exhaust from the heater circulated around oil pan.

2. Starting—warm air is cut o from the engine block and intr duced through the breather into t firing chamber. Heater exhaust co tinues to heat oil pan.

3. Running—warm air from heat is diverted to cab or bus interior e cept for keeping battery warm. E haust from heater continues to war

(TURN TO PAGE 132, PLEASE)

Stationary heating plant installation heats coolant which circulates throu vehicles by means of pipe and hose system equipped with self-sealing couple



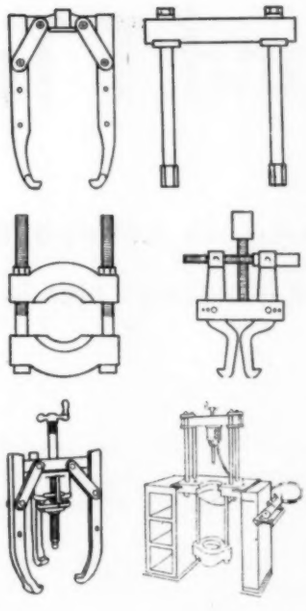
Careless removal of precision-built bearings with close tolerances often means an unsalvageable part. Expensive replacement can be avoided with the right equipment

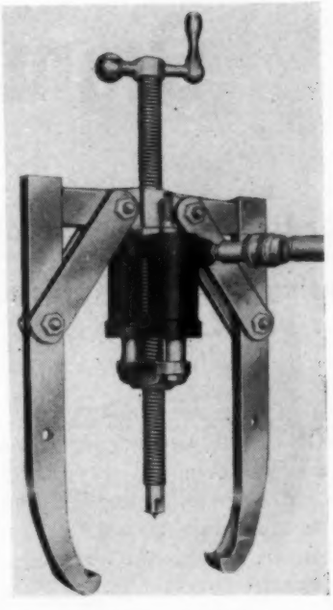
By A. R. Kaplan
Vice president, Owatonna Tool Co.

How to use a Bearing Puller . . . Better

SHORTER working hours, high labor costs, keen competition and the necessity for reducing "down time" has intensified the research on hydraulic tools. The use of hydraulic power for more efficiency and to save man hours is becoming more and more prevalent in the maintenance field where the time element is, in so many instances, a vital factor.

The proper application and use of pullers, whether they are screw-operated or hydraulically powered can stand considerable scrutiny. Precision built bearings, as well as many other moving parts in today's intricate machines, are fitted to close tolerances which can quickly be destroyed by the "sledge hammer" maintenance man. Precision parts, fitted to close tolerances must be treated with a respect in keeping with their cost, utility and availability.





The removal and installation of these parts, therefore, becomes vitally important to the ultimate efficient, smooth operation and performance of the whole unit. A part damaged in the process of installation, or improperly installed will eventually cause the failure of the whole unit and result in costly delays and expensive repairs.

For example, to remove a bearing from a shaft where the bearing is located against a shoulder or housing, assuming that the bearing is serviceable, a bearing pulling attachment, especially designed for such a condition can be used to remove the bearing without damage or distortion. This tool should be placed behind the bearing so that its knife-like edges engage the bearing. The attachment should first be applied independently of the power unit for best results. Thus when force is applied it is transmitted to the bearing at the closest point to the fit, and the bearing can then easily be removed. Prying with a bar or chisel to remove a bearing has a tendency to cock it and make it more difficult than ever to remove.

The principles involved in removing a gear, bushing, collar, coupling or other closely fitted part are similar to those involved in removing a bearing. In any case the force of the pull should be as close to the fitted section as is feasible. For example, in removing a gear, sheave or wheel of

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Diamond T Tilt-Cab

Coil springs counterbalance cab making it tilt forward easily without using power unit. Engine is mounted high in chassis for accessibility

DIAMOND T's tilt-cab models embody a new technique in cab-over-engine design. No essential change is made from the conventional engine, clutch, transmission, frame, axles and other major elements. However, these units are combined into a full COE vehicle, in which the cab, by a system of counterbalances, tilts forward for servicing without the need of a power unit.

The tilting action is effected without extra wiring and without "plumbing." In less than one minute the entire cab, cowl, fender and grille assembly lifts completely clear of the engine area, which is opened up for unobstructed access to every part.

Tilting procedure is as follows:

1. Release the clamp lock lever on the back of cab.

2. Open door of cab and pull safety release knob inside cab. This pulls the hook back from engagement at the hold-down point. Note: safety latch cannot be released with door closed.

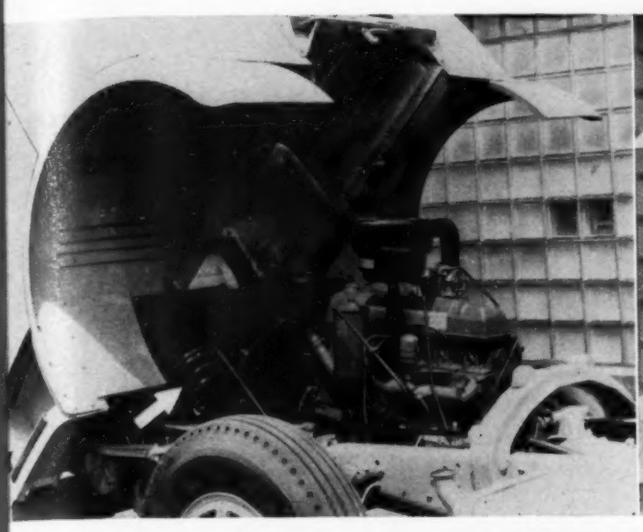
3. Lift gently on corner of fender and raise cab to tilt position (counterbalancing springs do the actual lifting for you).

4. Take strut rod out of holding rack and place it in socket provided at frame. This is a safety feature to hold cab in tilt position.

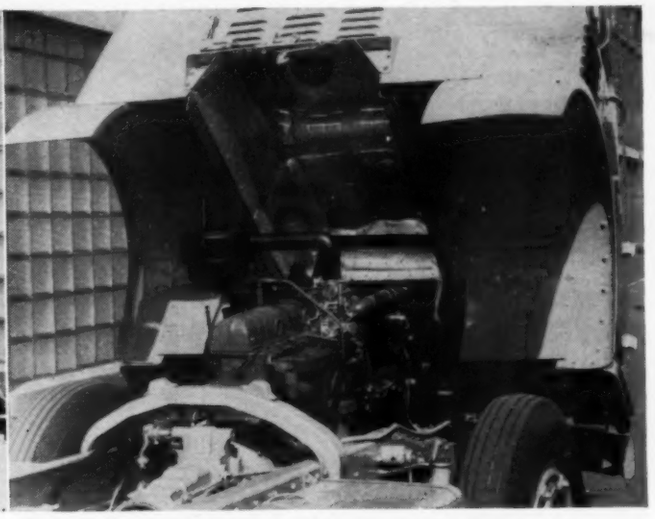
The design of the tilt-cab provides that the controls are unaffected when the cab is lifted. A floor section with all pedals and steering gear remains

Condensed Specifications

	422C Series	522C Series	622C Series
Gross Vehicle Weight	17,000–22,000 lb	17,500–24,000 lb	18,000–26,000 lb
Gross Combination Weight	35,000 lb	40,000 lb	45,000 lb
Maximum Tire Size	9.00 x 20	10.00 x 20	10.00 x 20
Engine Model	K-6271	K-6330	K-6363
Bore and Stroke	$3\frac{5}{8}$ x $4\frac{3}{8}$	4 x $4\frac{3}{8}$	4 x $4\frac{13}{16}$
Piston Displacement	271 cu in.	330 cu in.	363 cu in.
Maximum Torque	216 lb ft.	266 lb ft.	288 lb ft.
Brake Horsepower	112 @ 3000 rpm	141 @ 3000 rpm	150 @ 3000 rpm
Front Axle	Tim. FC-900	Tim. FC-900	Tim. FD-900
Rear Axle (Standard Model)	Cla. R-1000	Tim. H-100	Eat. 1790
Rear Axle (H Model)	Tim. H-100	Eat. 1790	Eat. 18500
Transmission	Warner T98	Clark 205V	Clark 205VO
Wheelbase Range	99–159 in.	99–159 in.	99–159 in.
Body Lengths	10–20 ft.	10–20 ft.	10–20 ft.
Base Chassis Weight	6700 lb	7100 lb	7500 lb



Arrow points to counterbalancing coil spring designed to permit lifting of cab without aid of special power unit



Right and left side views of engine with cab tilted show how engine is mounted high in frame for accessibility

stationary with the chassis. The steering column and gear shift control shaft pivot on universal joints with fixed bases at the floor level. This development eliminates the hydraulic controls and special linkages that would be needed if controls moved with cab in tilting position.

Other Features

INTERIOR construction of the cab proper includes a number of features to make the driver's job easier. The steering wheel is nearly horizontal to reduce steering effort because the normal pull of the driver's arm is perpendicular to the wheel rim.

The gear shift lever is conveniently mounted just below the steering wheel. All instruments are directly in front of the driver. Parking brake lever is easily reached and operated from the normal driving position.

Windshield has two sections each 33 in. by 26 in., giving vertical as well as horizontal vision. It is of heat-absorbing safety plate glass which also reduces glare from the sun. Cab window ventilator wings are the largest ever used in a production model.

The cab itself is all-steel, die drawn and welded, and insulated. "Dog-house" is especially protected with a one-inch insulating layer covered with heat-reflecting aluminum foil. It carries a large access panel for oil and water checking and replenishment. Door windows lower fully into the doors. Seats provide 39 in. of head clearance.

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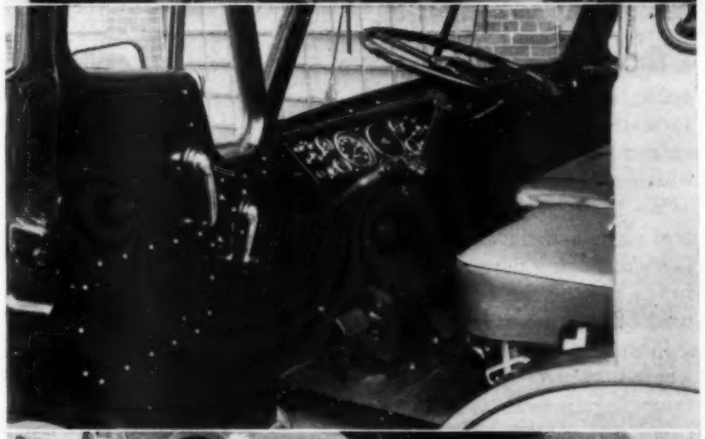
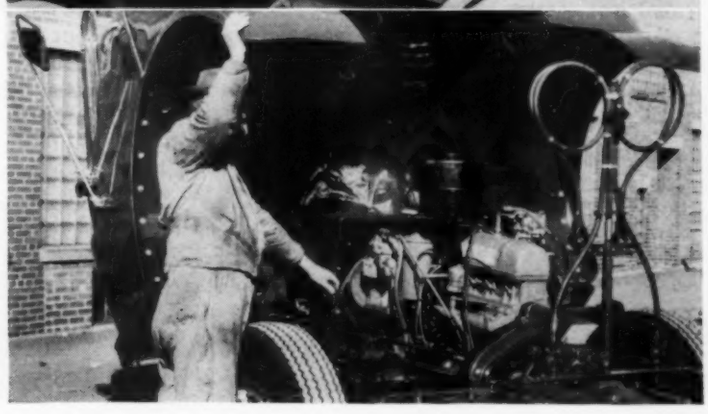




First step in tilting cab is to release latch at rear of cab, above right. Safety latch control knob under driver's seat is then released, center right. Cab can then be raised with one hand pull. Note hinged steering post and gear shift lever. Final step is to place safety brace into position, bottom right. Note below mechanics arm that accelerator and brake pedal remain in normal position on special platform as does the clutch pedal. No power unit is needed to tilt

Everybody Knows the PM Score at Campbell 66 Express

Mileage posted on king-size blackboards for all to see is key to parts change and servicing based on mileage life expectancy tables

By William T. Royston
Springfield Shop Superintendent
Campbell 66 Express, Inc.

A VISUAL aid in the form of king-size blackboards controls preventive maintenance on our fleet of 260 tractors, 408 trailers and 20 reefer units. Each of our divisions—eastern, southern and western—uses one in conjunction with our parts replacement and servicing life expectancy tables.

In Springfield, eastern division headquarters, the board occupies one wall and is about 15 ft high and 30 ft long. Space is provided for all the vehicles assigned the division. Information is written in the correct spaces from a permanent ladder which runs across on a track.

We have used this system for several years and the time-saving advantages of having pertinent information in full view of the shop personnel has paid off. Those who need to use the information can usually see it from where they are working. It eliminates thumbing through piles of papers or running through a bunch of file cards to find out what a tractor needs.

The status of 18 operations on a tractor are indicated by mileage. Tractors are listed by number and in the succeeding 18 spaces the mileages indicate when parts changes should be made or services performed.

Life Expectancy

FOR example we have set up life expectency tables for all accessory units and the mileage indicates the time for exchange. Also we have set up definite mileages at which our PM services are performed and other mile-based jobs. When a tractor comes in, its mileage accumulation indicates what work should be done.

Some of the 18 operations entered against the number of each tractor are: lubrication, PM service, wheel pack, generator, voltage regulator, spark plugs, valve rotocaps, valve adjustment, vavlve replacement, distributors, battery, carburetor, fuel pump, head bolts, air compressor, electric 2-speed transmissions, shift units, engines and transmissions.

The life expectancy tables were developed by running our own tests and compiling our own information so that they are based on our own particular operation. We have tried to mark them up for exchange at the period just before the most trouble is indicated. This system has eliminated almost all road or unexpected failures of such items as voltage regulators, valves, generators.

Here are our life expectancy mileages:

Generators	50,000
Voltage regulators	75,000
Valves	65,000
Two-speed electric shifts	50,000
Transmissions	150,000
Distributors	75,000
Carburetors	50,000
Fuel pumps	40,000

Last step in clearing a unit fo road service is to note the mileag This mileage figure is then added t the life expectancy table mileages fo the jobs just finished and entered o the proper spaces on the blackboar opposite the tractor number. The mileage figures then indicate at wh mileage reading those jobs and se vices will against be performed o that vehicle.

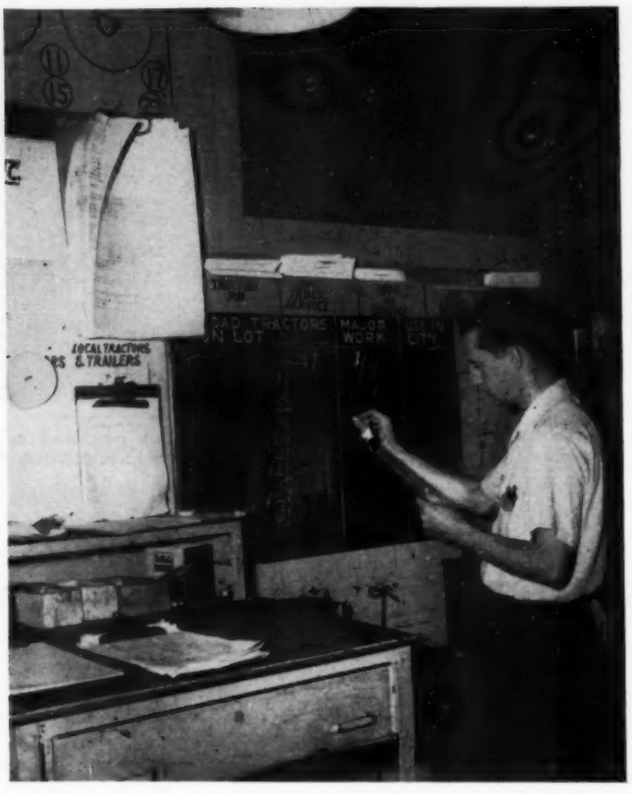
In addition to the data on the bi board we have written files of th work orders and other records whic can be used to check against an questioned accuracy of the figure on the board.

How Work Originates

OUR jobs originate by collecting th numbers and mileage of the tra tors and trailers that are on the lo This is usually the first order of bus ness each morning. The numbers ar posted on a small blackboard at th service desk. From this position th big board can be observed. For ex ample, as No. 124 is marked at pre ent a look up at the board shows wh operations are scheduled at that mil

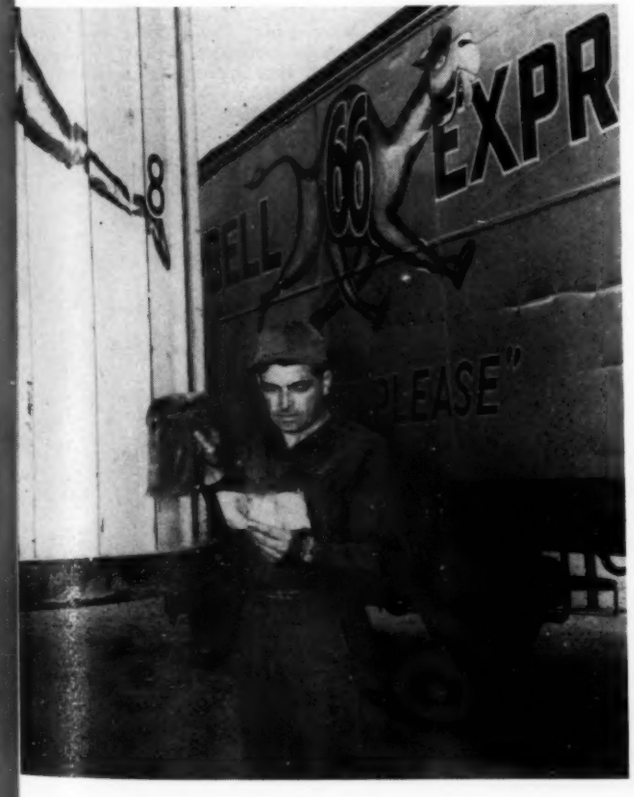
(TURN TO PAGE 86, PLEASE)

Mileage figures are posted on blackboard following tractor number, far left column, to indicate when anyone of 18 service operations are scheduled to be done again



Mileage of vehicle on lot is then compared to blackboard and work orders prepared when board indicates a job is to be done. Upper left is part of giant headbolt chart

Trailer service records are also carried on front of unit



Trailer service truck is fully equipped including ladder

Visual aids for efficient operation are not confined to shop. Signboard at terminal gate reminds drivers of their responsibilities and need for safety

Everybody Knows the PM Score...

Continued from Page 84

age. If it should be due for valve replacement, the order can be written up at once and posted on the board.

As a matter of fact, a great many of our work orders are written up in advance. When we see by the board that certain operations will be due about the next time the tractor gets on the lot, we write up the order in advance and send it to the service desk where it is held until the day that tractor is on the lot.

The successful use of these two blackboards has led to other large scale postings. For instance we have a large diagram of a cylinder head on the wall with the number sequence for tightening down head bolts. A mechanic tightening down a head can reassure himself of the proper sequence merely by looking at the chart on the wall.

Trailer Service

TRAILERS present a somewhat different problem since they are always being loaded or unloaded and we avoid the expense of moving them or interrupting the work by servicing them where they stand. Only trailers requiring major work, such as brakes, body repair or painting are taken out of service.

For servicing trailers we have built a service truck and placed it in the hands of one man, who then services all the trailers found on the lot each day and makes a written report of what he has done.

This service truck was made by revamping an old dock tractor. It is equipped with air tank and compressor and power lubrication equipment, electrical testing equipment and a kit of tools. The truck has a short ladder bolted to the front which may be extended upward so the top of the trailer can be reached for servicing running lights.

This combination takes care of all trailer service with the exception of wheel packs and brake relining.

On checking trailer tire pressures we follow a different procedure than most in that we record the pressures before they have been checked and matched. These data give us the pressures that were present when the trailer was on the way in. If some of the tires were underinflated we can check back to the person responsible. If it indicates a slow leak we can make the change on the lot and save the driver trouble on the road. Since all personnel knows that recorded pressures are those they bring in, we find that those responsible for maintaining proper air pressures are much more careful about checking them and in the long run this gives us a little more tire mileage than we would have otherwise.

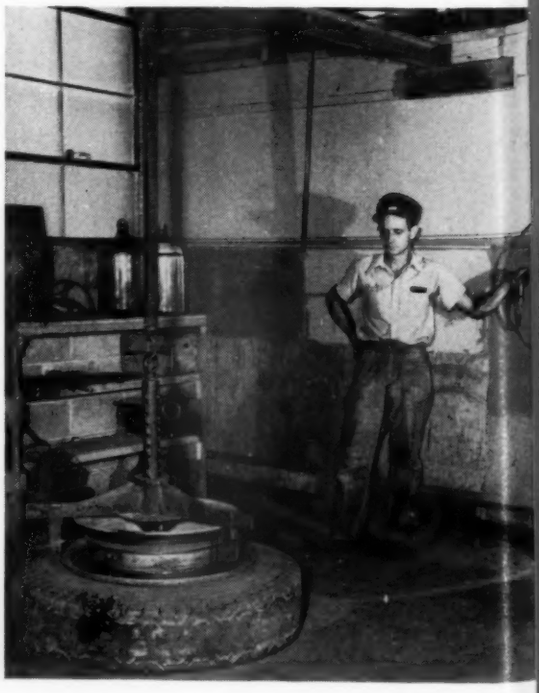
Duplicate Records

TRAILERS present another problem since a trailer assigned to one division may normally go into another division. We keep track of the service by having each trailer carry a duplicate set of its service records in a nose pocket. When one of our trailers goes into another division and its mileage shows need for service this division performs the service and sends us a record which we place on the big blackboard which keeps it up to date.

If other trailers come into our division we perform any needed service and send a report to the home garage of the unit.

(TURN TO PAGE 122, PLEASE)

For demounting tires, spider hung from coil spring fastens to pin which is attached to two brake cylinders below the floor that provide downward pu

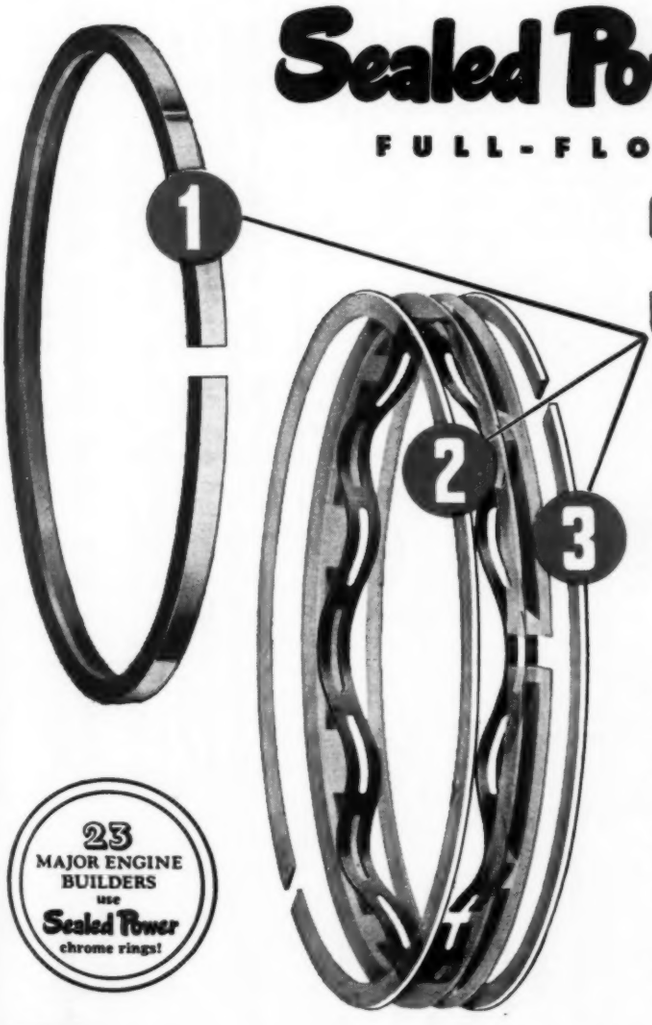


√ Better than any ring set without CHROME

√ Better than any other CHROME ring set

Sealed Power KromeX

FULL-FLOW RING SETS



3 vital surfaces are CHROME protected

Top Compression Ring of chrome-alloy cast iron has solid chrome face, factory-lapped to a light-tight finish, with sides Granosealed for greater flexibility.

MD-50 Steel Oil Ring with the Full-Flow Spring has chrome faced side rails for double mileage, with sides Granosealed for greater flexibility.

All rings in Sealed Power KromeX Ring Sets are beveled or tapered to thread-line contact for quicker seating and blow-by control.

23 MAJOR ENGINE BUILDERS use Sealed Power chrome rings!

GET IT FROM YOUR JOBBER

Best for Fighting Heat, Friction, Corrosion, Abrasion

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS BEST IN OLD TRUCKS

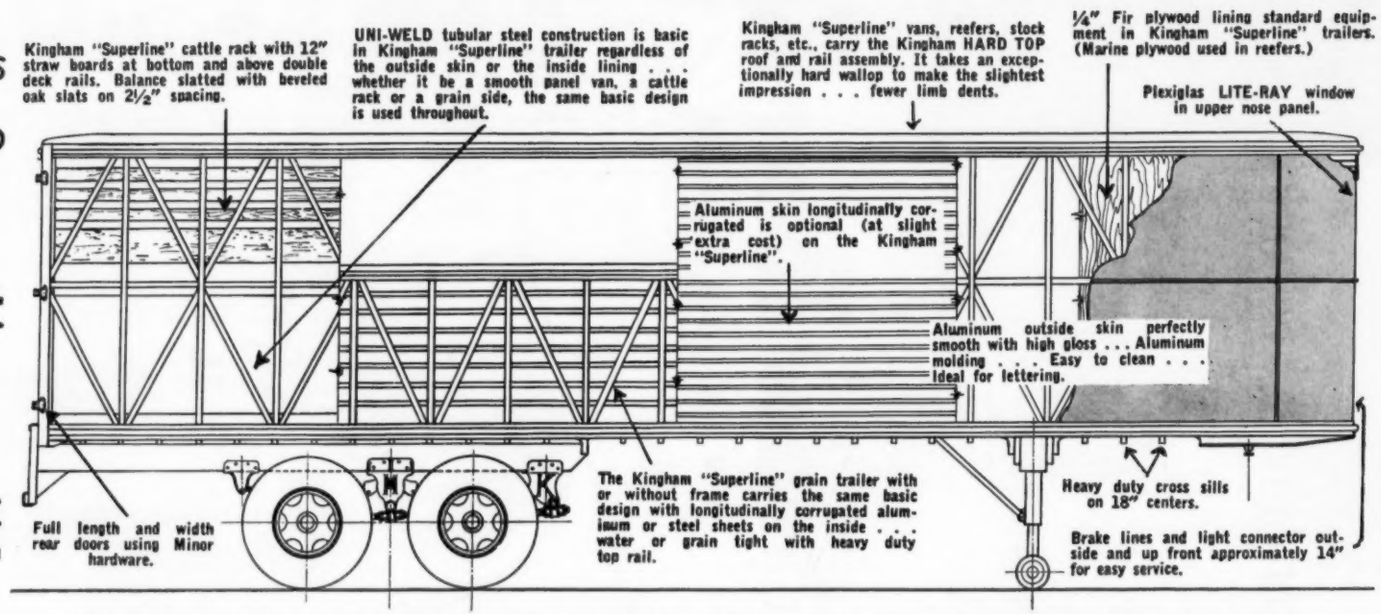
FULFILLING OUR PROMISE . . THIS IS IT!

THE NEW Kingham UNIVERSAL SUPERLINE Trailers

THE KINGHAM **UNI-WELD** *DIAMOND CONSTRUCTION IS* B.D.* *FOR YOUR BENEFIT.*

WE **SKIN** *IT OR* **LINE** *IT TO SUIT YOUR REQUIREMENTS.*

1. *Basically Designed.
2. Not new, but much improved, diamond tubular welded sides.
3. Simplified, sturdy design.
4. Lite-weight with strength.
5. Flexible yet versatile.
6. Low cost—easy to maintain.
7. The same Basic Design—available in standard production for vans, reefers, stock racks, grain bodies, furniture vans.
8. Easy to repair.
9. Outside wiring in conduit.
10. I.C.C. bumper.
11. Improved hardware.
12. A NEW look.
13. Front end sky-light—all vans.
14. Metal treated against rust.
15. Single or Tandem.


Kingham "Superline" cattle rack with 12" straw boards at bottom and above double deck rails. Balance slatted with beveled oak slats on 2½" spacing.
UNI-WELD tubular steel construction is basic in Kingham "Superline" trailer regardless of the outside skin or the inside lining . . . whether it be a smooth panel van, a cattle rack or a grain side, the same basic design is used throughout.
Kingham "Superline" vans, reefers, stock racks, etc., carry the Kingham HARD TOP roof and rail assembly. It takes an exceptionally hard wallop to make the slightest impression . . . fewer limb dents.
¼" Fir plywood lining standard equipment in Kingham "Superline" trailers. (Marine plywood used in reefers.)
Plexiglas LITE-RAY window in upper nose panel.
Aluminum skin longitudinally corrugated is optional (at slight extra cost) on the Kingham "Superline".
Aluminum outside skin perfectly smooth with high gloss . . . Aluminum molding . . . Easy to clean . . . Ideal for lettering.
Full length and width rear doors using Minor hardware.
The Kingham "Superline" grain trailer with or without frame carries the same basic design with longitudinally corrugated aluminum or steel sheets on the inside . . . water or grain tight with heavy duty top rail.
Heavy duty cross sills on 18" centers.
Brake lines and light connector outside and up front approximately 14" for easy service.

All wiring outside in conduit for easy servicing — these and many more outstanding, tried and proven features such as the Kingham tubular one piece axle, 2 stage easy ride progressive type springs, rubber mounted adjustable radius rods, electric steel castings, the famous light weight 3 Pointer tandem assembly with only two lubrication points, mud flaps, directional signals, ICC safety bumper, 2 speed light weight steel props, ICC lights, etc., are all standard equipment on the Kingham "Superline" trailer *now in production.*

NATIONAL SALES — ***SEE YOUR NEAREST KINGHAM DISTRIBUTOR TODAY*** — **NATIONAL SERVICE**

A load behind is a trip ahead

KINGHAM TRAILER COMPANY, Inc., LOUISVILLE 10, KY.

SERVICE
SALES
KINGHAM TRAILER COMPANY, Inc., LOUISVILLE 10, KY.
A load behind is a trip ahead
14. Metal treated against rust.
15. Single or Tandem.

Free PUBLICATIONS

FOR YOUR CONVENIENCE USE THE POSTCARD ON NEXT PAGE

L1. Road Test Report

That venerable gentleman from Ann Arbor, John S. Worley, has done it again in the form of a 33-page booklet entitled, "Nothing But the Truth." It is a concise summary of important statements contained in the final report on Road Test One MD—the famed Maryland Road Test.

Says Professor Worley: "These tests are being presented as representative of concrete pavements in general and used in an attempt to convince the general public that highway construction has reached the limit of its capacity to carry the loads of modern traffic. This conclusion is being broadcast in complete disregard for the most significant result . . . namely, that not a single structural crack developed in concrete slabs built on non-pumping grandular sub-grade. This is not what I call objective."

The booklet has been printed and is being made available without cost by the Fruehauf Trailer Co. Says President Roy Fruehauf, "We look upon it as a report to end all reports on the Maryland Road Test." No one who has kept a file on this important road test should be without a copy of this report. To obtain your copy, circle L1 on the postcard on the next page.

L2. PM Booklet

This preventive maintenance booklet rather than explain parts replacement and servicing operations, tells fleet maintenance men what they may expect to gain from an adequate PM system. First section of the presentation shows the cost per mile reasons for such a system, balance of the 23-page booklet illustrates some failures of major parts and explains why proper PM would have prevented the failures.

It shows how vibration can cause failure of an often neglected part, in this case a universal joint cross, suggests that regular PM on drive line, bearings, flanges and universal joints will reduce costly repair because the condition has continued to a point of excessive wear.

Wheel adjustment, spark plugs, distributor and ignition timing, valves, clutch, engine oil, fuel pump, starter, and generator are other items considered in this thought provoking booklet.

For your copy, circle L2 on the postcard.

L3. Truck Story Reprint

Here is a pocket-size, 12-page reprint of a magazine article about the trucking industry. It tells the story of the entire industry. Common carriers, private carriers, utility fleets, heavy haulers and all the rest are included. It is a story to be proud of, and most readers will probably want to have more than one copy so they can pass them on to those of the public who do not understand the importance of the trucking industry.

The article opens with a discussion of the many different types of men who make up the industry. Following this is a brief description of what trucks contribute to our transportation economy and a short history of their development. The safety record of the industry comes in for its share of discussion as does today's problem of more adequate highways. For a copy, circle L3 on the postcard.

L4. Highway Essays

Some 44,000 persons sent in entries in the recently held General Motors Corp. Better Highways Award Contest. The five judges went to work and made their decisions with the top award of $25,000 going to Robert Moses of New York City.

As a natural follow-up to the interest in adequate roads generated by the contest, General Motors has made available a 100-page, pocket-size booklet reprinting in full the first three winning essays and summaries of the next 12 top award winners.

Topics of special interest to fleet operators referred to in many of the essays include size and weight limits, tolls, downtown parking and unloading, insurance, bus and truck fees. A reading of this booklet will give fleetmen an idea of leading thought on the problem of adequate highways and some suggestions as to how we can obtain the roadways we need.

For a copy, circle L4 on the postcard on the next page.

L5. Shop Safety Manual

Working Together for Safety is the title of a new safety manual. The handy, pocket-size, 32-page booklet contains instructions in safe work habits covering almost all shop and garage applications.

There are 17 subject headings in this well-illustrated, two-color booklet as follows: general safety regulations, machine operations, hand tools, electrical equipment and power tools, gas cylinders and compressed air fire prevention and fire fighting, clothing, protective equipment, lifting and carrying, piling and storing, power trucks and hand trucks, pedestrians, ladders, shop cleanliness, hazardous work, health and off-the-job safety.

After reviewing a copy, fleetmen will probably want to see that every man in the shop has one for his personal information and education in safe shop practices. For a free copy and additional information on quantities, circle L5 on the postcard.

NEW Products

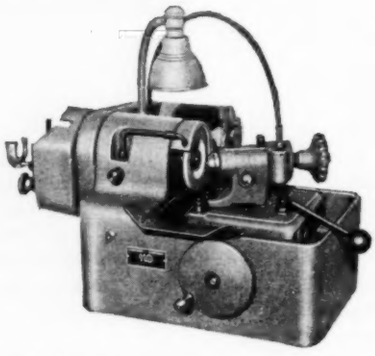
ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD

P1. Parts Washer

Automatic cleaning of small parts, complete assemblies and tools is made possible by a new air-powered washer now being produced by Kelite Products, Inc., Los Angeles, Cal. Cleaning is achieved by the action of an oscillating turntable which is submerged in a cleaning solution. Parts are placed in a perforated basket which rides on the turntable, while complete assemblies are placed directly on the turntable. Speed may be varied from 0 to 240 oscillations per min by dialing the desired speed on the ¼ hp air motor, operated by air pressures of from 30 to 120 psi. The tank is extra heavy gage steel, 20 by 20 by 15 in. The unit stands 30 in. high and weighs 170 lb.

P2. Rear Lamp

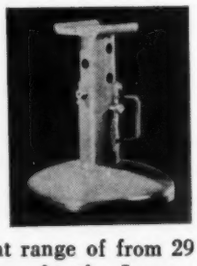
A new unit made by Do-Ray Lamp Co., Inc., Chicago, is designed as a warning signal, tail light or emergency lamp for dump truck bodies or similar installations. The lamp has been designed to fasten at the tailgate and swings on its mounting bracket so the light shines to the rear at all times. Thus when dump body is lifted, while light from cab mounted or under body rear light might be covered, the new model is visible at all times.



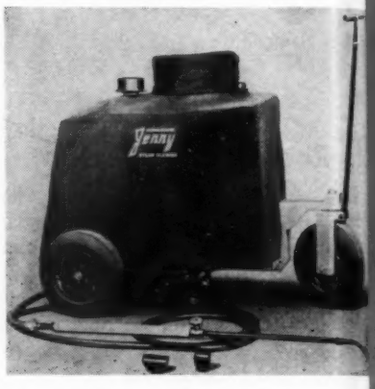
P3. Valve Refacer

A new wet valve refacer, Model No. K500, has been introduced by K. O. Lee Co., Aberdeen, S. D. Tables are constructed with V-ways with automatic take-up for wear. Grinds wet or dry and is equipped with a large five-inch grinding wheel. Valve face angle range is from zero to 90 deg with positive-stop feature and minus one degree setting. One valve to feed coolant to either grinding wheel. Standard equipment includes a diamond dresser, micrometer butt grinding attachment assembly for grinding valve stems, tappets and rocker arms. Valve stem capacity is 9/32 to 9/16 in. with standard equipment collet and can be increased for a range of 7/32 to 11/16 in. with extra equipment collets. It will reface valves with heads up to 4-in. diameter within the valve stem range.

P4. Truck-Trailer Stand



A heavy-duty truck-trailer stand designed for parking truck-trailers with heavy loads is announced by the Jergens Tool Specialty Co., Cleveland, Ohio. It has an adjustment range of from 29 to 44 in. A spokesman for the Jergens Co. stated that this new truck-trailer stand was specifically designed by the White Motor Car Co.



P5. Steam Cleaner

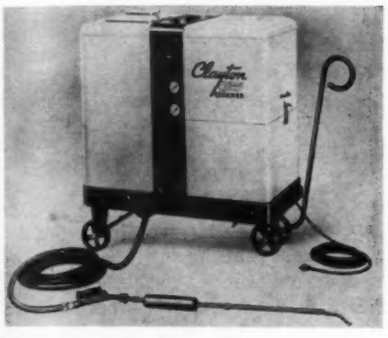
The new "JO" Hypressure Jenny steam cleaner, made by Hypresseum Jenny Division, Homestead Valve Mfg. Co., Coraopolis, Pa., features easy movement on its 16 by 4-in. rubber-tired wheels and welded steel chassis. Nozzle control system is said to save fuel, chemicals, water, and time by permitting the operator to start and stop the unit at the cleaning job, 100 feet or more from the Jenny. From a cold start a full-powered blast is delivered at the cleaning gun in less than 90 seconds. Its vapor spray output is 90 gal per hr but the unit is also available with 12 gal per hr output.

P6. Trailer Hitch

Premier Mfg. Co., Portland, Ore., has announced a new medium duty hitch called the Premier No. 380. It is a solid pintle type hitch to accommodate a 2-in. drawbar eye. The hitch has a breaking strength of more than 90,000 lb and weighs 27 lb. A companion model, the No. 480 will accommodate a 2½-in. drawbar eye. It has a breaking strength in excess of 150,000 lb and weighs 37 lb. The latch will raise to the open position automatically if locking is not completed

The latest developments in parts, accessories, equipment and tools for the fleet shop

CIRCLE APPROPRIATE NUMBERS ON POSTCARD FOR MORE INFORMATION

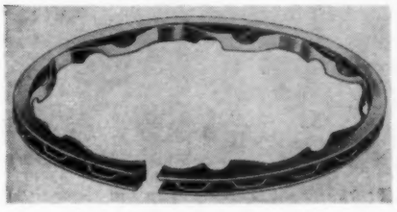


P7. Steam Cleaner

A new high-capacity steam cleaning machine, capable of discharging 150 gal of cleaning solution per hr is announced by Clayton Mfg. Co., El Monte, Cal. The Model No. LH Clayton Kerrick-Steam Cleaner offers a graduated range of cleaning pressures extending from 30 psi for such jobs as paint stripping, to 100 psi for the rapid cleaning of heavily encrusted or grease-coated parts and surfaces. Full working pressure is attained in two minutes from a cold start. A wide variety of models is available: oil-fired and gas-fired; electrically driven and gasoline engine driven; portable, stationary or trailer. Each can be optionally equipped with remote nozzle control. The 15-gal solution tank is equipped with water and steam inlets for ease and efficiency in mixing and dissolving the detergent mixing and dissolving the detergent.

P8. Air Gun

C. A. Roesch and Co., Los Angeles, Calif., is introducing a new, triple-purpose sand blast, liquid and air cleaning gun under the trade name of "Carco." It operates efficiently on air pressures of 75 lb and up. Maximum efficiency for sand blasting is obtained with air pressures of 100 to 140 lb. It has a metal body with precision built valve and trigger assembly and is equipped with a hardened steel jet and nozzle.



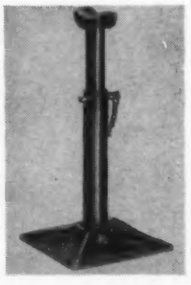
P9. Piston Ring

A multiple-piece, chromium-plated, steel oil control piston ring, known as the No. CRS-200 "Unitized" type has been introduced by the Muskegon Piston Ring Co., Muskegon, Mich. This piston ring is pre-assembled at the factory with the individual pieces bonded together into an integral assembly with a special adhesive agent which dissolves in the heated engine oil during run-in. Thus the ring is easier to install.

P10. Metal Faced Panels

A structural material for motor truck bodies, combining the strength and durability of metal and cross-grained woods, Armorply, is a product of United States Plywood Corp. It is a laminate, with a metal facing bonded to one or both sides of a plywood core. While almost any metal of almost any thickness, can successfully be used for this facing, aluminum, zinc-coated steel or stainless steel are generally employed.

P11. Garage Horse



A new pin-lock type garage horse has been announced by Auto Specialties Mfg. Co., St. Joseph, Mich. Rated at two-ton capacity, this "Drednaut" horse is tested to withstand a 50 per cent overload. It has a 8 by 8 in. base, a low height of 12 in. and a raised height of 20 in. The load rest is self-positioning.

P12. Power Sweeper

A new power sweeper that reportedly sweeps over 100,000 sq ft per hr in open areas and can be dumped by one man in about 30 sec has been announced by G. H. Tennant Co., Minneapolis, Minn. It is suited to sweeping garages, loading docks, depots, storage areas, etc. Operated by one man, it covers a 36-in. wide path and a rotary 21-in. side-brush allows cleaning flush with walls, curbs, boxes, and guard rails. Dirt hopper holds and dumps loads weighing up to 700 lb. A 7.3 hp air-cooled gasoline engine powers the machine. The drive is through a 5/8-in. pitch drive chain.

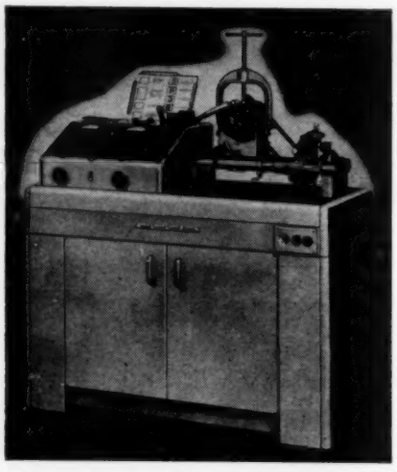
P13. Cut Off Valve

Skinner Electric Valve Division, Skinner Chuck Co., New Britain, Conn., announces its new stainless steel solenoid valve Series No. V61. This "cut-off" type valve, designed for LPG fuel systems, features "snap-shut" action and bubble-tight sealing. It has only two moving parts, and can be disassembled and serviced without removal from the line. A heavy spring return assures positive shut-off regardless of the valve's position. Standard models in the series are the V61-200, rated at 250 psi with .136-in. orifice, and V61-300 which is rated at 300 psi with .125-in. orifice.

(TURN TO NEXT PAGE, PLEASE)

New Product Descriptions

Continued from Page 91

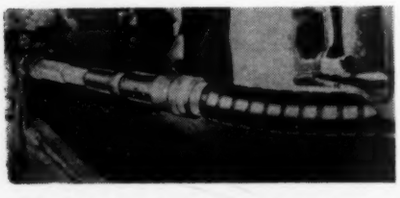


P14. Generator Servicer

A new regulator-generator servicer, Model No. E-1256, containing in one compact unit all necessary instruments and tools to do testing and overhauling of both 6 and 12-volt generators and regulators has been developed by Allen Electric and Equipment Co., Kalamazoo, Mich. It requires a floor space of 48 by 21 in. The master control unit contains voltmeter, ammeter, field rheostat, carbon pile, armature growler, regulator mount, and pre-heat oven. Mounted on the bench are universal generator vise, armature lathe, mica undercutter. The pole shoe spreader and screwdriver, and puller press accessories are also included.

P15. Flexible Drive

Stow Mfg. Co., Binghamton, N. Y., has announced a new flexible drive for tractor-trailer power take-offs. The drive consists of a 1¼-in. flexible shaft in combination with a square telescopic



rod and tube. Purpose of the telescopic rod is not only to act as a quick disconnect coupling but also to take care of the change in length of the drive when the tractor-trailer is jackknifed. A universal joint is used between the telescopic rod and the power-using unit to prevent the flexible shaft from being bent too severely. Installation has been made with success for petroleum tank trailer pumps and for dump trailer hoist pumps.

P16. Cargo Heater

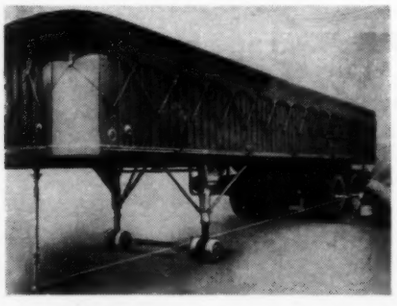
Being produced by Utilities Distributors, Inc., Portland, Me., a new LP gas cargo heater has been announced. It is thermostatically controlled to a constant temperature without attention from the driver. It requires no spark or ignition and is completely independent of the tractor. It occupies less than one sq ft of body area and provides 160 cu ft of 275 deg air per min. Fuel cost is estimated at about 2½ cents per hr. It is equipped with a safety shut-off, meeting ICC requirements. It is approved by American Gas Assn. and accepted for use under the terms of the National Bureau of Fire Underwriters Pamphlet No. 58.

P17. Spark Plug Tool

A spark gapping tool, announced by Clark-Feather Mfg. Co., Fort Morgan, Colo., sets the gap with precision accuracy because of a spring steel gage wheel. It automatically sets standard gaps from .022 to .040 in. on plugs from 8 mm. to 16 mm. within .0005 in.

P18. Trailer Alignment

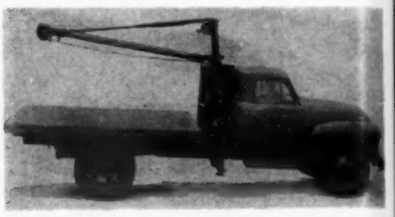
An improved method, called the "Bazooka Method" of checking trailer axle alignment has been recently developed by B. K. Sweeney Mfg. Co., Denver, Col. It is so-named because of the appearance of the device used to



extend the trailer king-pin center to the ground or floor level. When the king-pin center has been extended with the "Bazooka," a direct measurement is taken from the extended king-pin center to the center points of two cone-shaped, threaded Axle Extensions mounted one on each end of the trailer axle. The comparative measurements thus taken give an accurate check of the trailer's axle alignment.

P19. Truck Crane

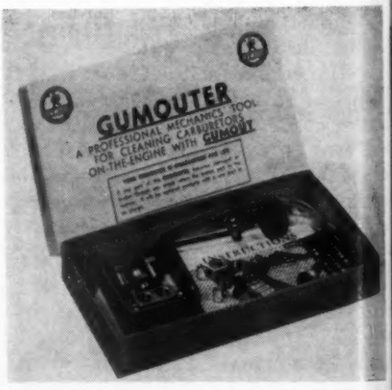
A line of truck cranes adaptable for use on any truck has been announced by Ray-Lind Mfg. Co., Iron River, Mich. It is available in capacities from ½ to 2 ton. The crane unit mounts behind the cab and occupies from 16 to 18 in. of space. There is no reduction in



truck body or platform capacity and the entire load-carrying capacity of the bed is retained. The loader is made in two models; one with an elevating mast, and one with a "fold-over" superstructure. Standard loaders will pick up loads from any radius up to 16 ft. On the "fold-over" models, the boom swings 170 deg, on the elevating mast models the swing is a full 360 deg. Power for hoisting is supplied by the truck engine through a power take-off.

P20. Carburetor Cleaner

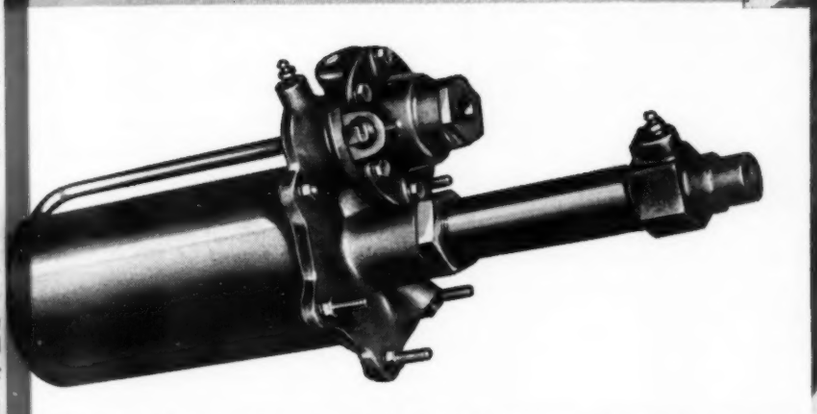
Gumout Division, Pennsylvania Refining Co., Cleveland, Ohio, has announced a new and improved package for its Gumouter. The sturdier and more compact box provides a better

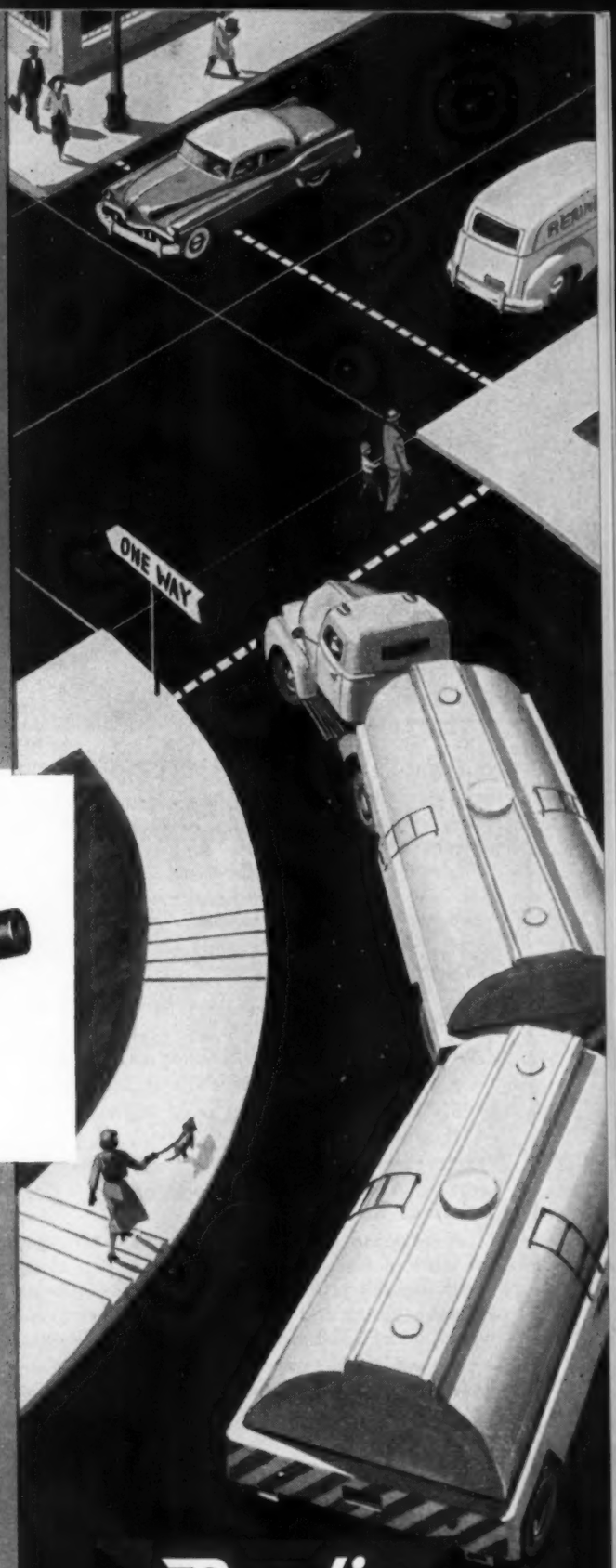


means for storing the Gumouter. A special inside compartment holds the gas line plug and various adapters. The cover is hinged and fixed to bottom part. The Gumouter is the "professional" applicator which is used to feed Gumout mixture directly through the carburetor. It is attached to the carburetor in place of the gas line. This application is reported to clean the carburetor without taking it apart or off the engine in less than 20 min.

Bendix AIR-PAK

gives faster, better controlled braking by combining air power with hydraulic actuation





r power braking that meets every situation, specify AIR-AK*. Here in one easy-to-install unit is combined the advan-es of hydraulic brake actuation with an air brake system.

Here's how it works. AIR-PAK changes air pressure into draulic pressure by means of two directly connected pistons. us, a non-compressible column of brake fluid instead of air nnects between the driver's foot and the brake shoe. The ult is faster brake action and better control.

Another important AIR-PAK advantage is the fact that akes can be applied by foot power alone—an emergency nd-by when braking is required before air pressure builds , or if air pressure should fail for any reason.

The performance proven AIR-PAK is a product of Bendix, gest producer of power brakes and builder of Hydrovac*, rld's most widely used power brake.

For truck manufacturers or operators interested in AIR-PAK, illustrated folder is available on request.

*REG. U.S. PAT. OFF.

THE MOST TRUSTED NAME IN BRAKING

Bendix Products Division

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Bendix AVIATION CORPORATION

Let's Correct Inaccuracies in

Multiple-Draft Weighing

Axle weighing can cause an error of over 3 lb in every 100 lb of truck gross weight

By J. E. Nicholas
General Manager
Indiana Motor Truck Assn.

HOW CAN there be accurate and uniform weighing of trucks nationwide? We find that there are hundreds of commercial scales in our state where the approaches are not proper for multiple draft weighing. Merchandise is bought and sold daily over these scales and every time a purchase or sale is made somebody receives improper weight.

Following a report by Mr. Nicholas, the 38th National Conference on Weights and Measures, recently held in Washington, D. C., adopted a resolution recommending that the National Bureau of Standards, the various States, the Bureau of Public Roads and the trucking industry cooperate in a thorough investigation of weighing of axle loads in order to devise a method of accurately determining the true axle load.

These are the scales that grains, feeds, and coal are bought and sold over day after day. And, these are the same scales, available in every community, that are often used for checking motor vehicles before they go out on the highway. We often find that even new scales installed for weighing trucks by the multiple draft procedure are inaccurate.

It is high time that uniform methods were adopted in the various states for the weighing of motor trucks and more specifically — multiple draft weighing. Over the years standards for single draft weighing have been established and well received.

However, in multiple draft weigh-

(TURN TO PAGE 128, PLEASE)

Loadometer Weighing

The weighing of trucks in drafts, or multiple-draft weighing, consists of weighing individual or combination axle loads, adding the results and accepting the sum as the total weight of the vehicle. The method is an expedient only and is accurate only when the load on each axle remains constant during the entire weighing procedure. Variations occur with:

1. The gradient or level of the scale-approaches upon which one axle load may rest.
2. The vehicle or combination and certain component parts of either.
3. The nature and distribution of the load.
4. Accidental or other shifts of load forces.
5. The accuracy of the scale itself.

Thus errors as great as 3.2 percent are possible when these factors are not controlled with use of wheel loadometers under each wheel. When only two loadometers are used, the error may be as great as 10 per cent.

A weighing demonstration conducted to determine the accuracy of loadometers recently pointed out the shortcomings of multiple-draft weighing. In this demonstration, weighing first one side of the tandem group and then the other with two loadometers, showed a variation of 7380 lb over the true scale weight of 70,260 lb.

The vehicle, a tank semi-trailer for carrying acids, showed the following weights with the **Loadometer** method and over **City Scales:**

	▼	▼
Steering axle	7380 lb	7680 lb
Right tandem	18,210	
Left tandem	16,395	
Total	34,605	38,880
Right trailer tandem	17,990	
Left trailer tandem	17,345	
Total	35,335	31,380
Gross vehicle weight	77,320	70,260

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Multi-Stop Economics

Dollars Cut From Delivery Cost

Are Equivalent to Higher Sales Volume

For retail delivery fleets, a transportation engineer tells the "why" and "how" of operating economy

Here is the third and final article in the series on multi-stop, lightweight fleet operation. Devoted to a general discussion of the economics of fleet management, it follows articles on the merits of aluminum and steel bodies (May) and on choice of the proper body type (June).

This material is based on a paper presented by the author at the Milk Industry Foundation. It has been modified with the author's permission to apply to most other types of retail delivery operations.

By Martin L. Orner

Vice President, A. E. Friedgen, Inc.
Transportation Consulting Engineers, New York City

MOST expenses in connection with retail delivery are actually incurred while the vehicle is away from the plant. There is, therefore, room for possible waste, and by the same token an opportunity for potential savings, in the control of the many items that go to make up delivery costs. A dollar saved in delivery expense may be the equivalent, as far as net profit is concerned, to adding anywhere from $30 to $50 additional sales. And it is much easier to save the $1 in delivery expense than it is to increase sales by the amounts indicated.

Even a casual study of the major items in operating and maintenance practice will disclose points at which adequate control can mean the difference between high or low cost operation.

Excessive fuel consumption can be very costly, particularly on retail milk delivery routes where it is the general practice to permit the engine to run from the time the truck leaves the dairy until the time it returns. Taking as an example a truck which operates 50 miles a day, a difference of 3 miles per gallon of gasoline can mean a difference of $70 per year in gasoline cost for the vehicle. When, as is the case in retail milk delivery operation, profit is measured in mils per point,* this difference in gasoline cost for a single truck can multiply into a tremendous difference in profits or costs when applied to the fleet as a whole. If fuel consumption is not controlled, it means that thousands more points must be achieved each year to make up for the waste of excessive fuel consumption.

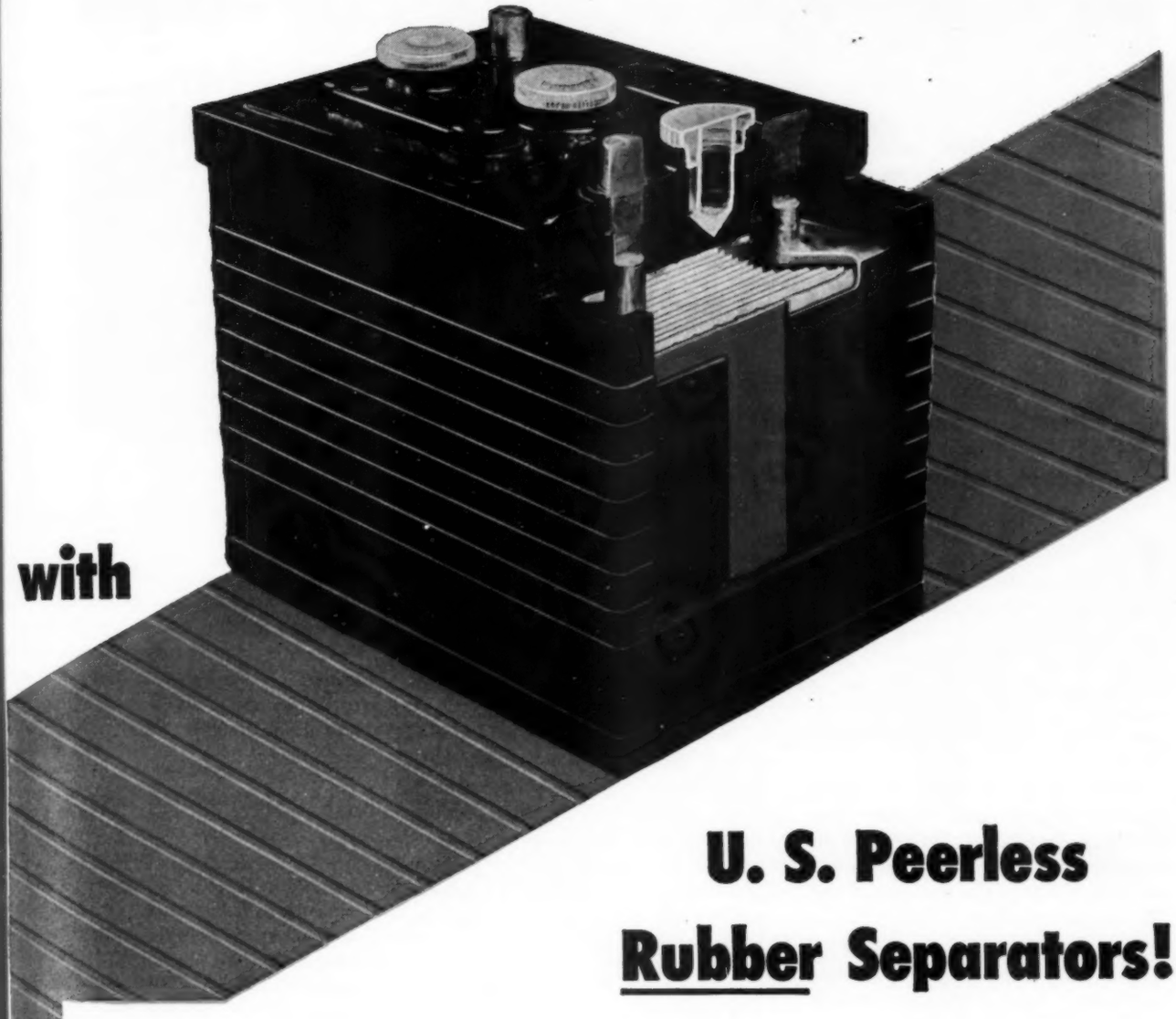
To correct this condition requires that engines be properly tuned-up, that routemen be trained to properly start and stop their vehicles and that a close check be kept of the mileage to eliminate unnecessary mileage, therefore, unnecessary use of gasoline. Proper inventory controls must be instituted and a close check kept on each load of gasoline received to make certain that the fleet receives the amount it is charged for. Proper sizes of gasoline tanks should be utilized on long mileage trucks so as to eliminate road purchases of gasoline at higher prices. Special gasoline commonly known as Hi-Test or premium gasoline should not be used for retail milk trucks.

I mentioned earlier about the common practice of permitting engines to idle on retail routes. Today most milk deliveries are made during daylight and in many of our cities, particularly our larger cities, it is a violation of the law to permit a motor vehicle to be parked unattended with its engine idling.

(TURN TO PAGE 176, PLEASE)

*A point is the milk distributor's term for the sales value equivalent of one quart of milk.

More mileage per battery dollar



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Month after month, mile by mile, Peerless' physical, chemical and electrical properties guarantee a better-performing, longer-lasting, more economical battery. For example:

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(3)—Peerless delivers improved starting performance in cold weather, delivering up to 10% more power when needed most—plus extra protection in hot weather. And Peerless cuts costs because its low electrical resistance requires lower charge currents.

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Please send me my free copy of booklet on U.S. Peerless Rubber Separators.

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From left: TTMA Managing Director John B. Hulse, American Trucking Assns. Equipment and Maintenance Section Chief L. C. Kibbee, White Motor Co. Assistant to the President and Society of Automotive Engineers President Robert Cass, Fruehauf Trailer Co. Vice President C. L. Schneider, Personnel Institute Inc. President Morris Pickus, TTMA President William E. Grace, Columbia University Economics Professor Dr. Leo Wolman, Automobile Mfrs. Assn's John King, ATA Regular Common Carrier Conference's Robert Douglas, ATA Legal Counsel Harry E. Boot, and Livestock Conservation, Inc. representative Michael O'Connell.

Trailer Men Discuss Design

Nation's economic status, Ohio axle-mile tax also interest those attending TTMA's Summer Meeting

FROM the fleet operators' standpoint, most interesting feature of the two-day summer meeting of the Truck-Trailer Manufacturers' Association in Chicago recently, was an engineering discussion designed to gear trailer production to fleetmen's needs.

Participating in the discussion were two representatives of American Trucking Assns., Bob Douglas of the Regular Common Carrier Conference and Lou Kibee of the Equipment and Maintenance section.

Among other things, it was agreed to make further study of gaining maximum cubic capacity within specified trailer length; to cooperate on joint engineering approach to tractor-trailer design, and to expand engineering research to simplify trailer repairs in fleet shops. Considerable emphasis was given to the problem of reducing the frequency of needed service attention to trailers. A goal was set to strive for design that would permit the interval of service to be extended as long as a year for lubrication, brakes, lighting and safety accessories. Obviously such a change cannot come about overnight.

In a special conference on low bed trailer practices, it was recommended that lights, turn signals, reflectors, and lashing connections should be included as standard equipment. It was further recommended that ramps and mud flaps, at least for the present time, should not be included as standard equipment, nor should jumper cables and hose connections, which are primarily the function of the powered vehicle.

In another discussion of livestock trailer design, it was recommended that particular attention be given to front and side ventilation, durable flooring that would provide good traction to animals, interior requirement for animal sanitation, open-end outlet gaits and suitable closings for winter shipments.

Clouds in Economy

IN ANOTHER session Leo Wolman, Professor of Economics at Columbia University, threw out a warning signal in regard to the nation's economic status. On the darker side, Dr. Wolman pointed out that; (1) raw material prices are weak, (2) exports are falling, (3) debt, both government and private, is growing, (4) plant expansion is reaching its peak, and (5) the consumer, for the first time, is in a position to cut off normal buying if he feels prices are too high.

On the brighter side, Dr. Wolman pointed to the fact that banks are much stronger than 30 years ago and that there are many "built-in stabilizers" such as the high tax structure, which could be altered in the case of a business crisis occurring.

The discussion was particularly interesting in view of the tremendously optimistic long-range report presented by Professor Barloon to the same group at its Winter Meeting, six months ago. (CCJ, February, page 64.)

Ohio Axle Tax

AT STILL another session, Harry E. Boot, legal counsel of the American Trucking Assns., reviewed legislative developments in 44 state sessions during the past year. His comments were similar to those presented in this publication last month (page 80) as compiled by Arthur C. Butler of the National Highway Users Conference.

But Mr. Boot laid special emphasis on the new Ohio axle tax law, labeling it as a third structure tax of the most vicious type. "One of the greatest difficulties," he said, "is the fact that while the new law ostensibly provides for granting reciprocity to vehicles from other states, the authority for such agreements is limited to pacts with other states that have a similar mileage or third structure tax that could be waived for vehicles from Ohio. It does not take a lot of figuring to see that this is going to add to the cost of motor carrier operation which is passed on in due course to the citizens of Ohio."

"Little compressor exchange cost in many years use on our vehicles equipped with Wagner Air Brakes"

says: E. "Pop" Apperley, Superintendent of Maintenance
INTERSTATE DISPATCH, INC., Chicago, Illinois

Regardless of how many miles your fleet travels, you'll be money ahead if you take the advice of men like "Pop" Apperley. Install Wagner Air Brakes and prove to yourself that they will reduce costly down time for shop repairs, are easy to install, and guarantee you and your drivers reliable, safe-sure road stopping.

The heart of all Wagner Air Brake Systems is the Wagner Rotary Air Compressor ... the compressor that maintains uniform torque load because thousands of small overlapping air compression impulses occur each minute providing smooth, dependable operation and quiet performance. There's no carbon and sludge formation in air lines either, because the oil is separated and cooled before the air is discharged from the Wagner Rotary Air Compressor. This results in the reduction of air temperature retarding the formation of carbon.

Convert your present vehicles to Wagner Air Brake Systems ... it will mean your assurance of more profitable over-the-road hauling. And, when you order new vehicles be sure to specify Wagner Air ... you can get full information by sending for your free copy of Wagner Bulletin KU-201A.

INTERSTATE DISPATCH, INC.

Fast Motor Freight

"OVERNITE • EVERY WHERE"

GENERAL OFFICES 3636 SOUTH WESTERN AVENUE, CHICAGO 9, ILLINOIS

Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis 14, Missouri

October 9, 1952

Gentlemen:

Our tractor units chalk up a lot of mileage while hauling freight over the mid-west. As superintendent of maintenance for Interstate Dispatch, Inc., my main responsibility is to make sure all our road vehicles are in perfect condition before they go out. This means our drivers know the trucks they're driving are safe trucks—thoroughly checked and in top condition.

My experience with Wagner Air Brake Systems has shown that I can rely on the performance dependability of these brake units knowing that they'll provide the needed power to stop our vehicles safely, smoothly at all times. Much of this is due to the Wagner Rotary Air Compressor. It is quiet in operation, easy to install, provides ample air, and lowers our maintenance costs. In fact, I've found that Interstate Dispatch, Inc., has had little compressor exchange cost in many years use on our vehicles equipped with Wagner Air Brakes.

Very truly yours,
E. Apperley
E. APPERLEY
Superintendent of Maintenance

EA pw

TERMINALS: ST. LOUIS • INDIANAPOLIS • DAVENPORT • SPRINGFIELD • ROCK ISLAND • RICHMO... KEE • CINCINNATI

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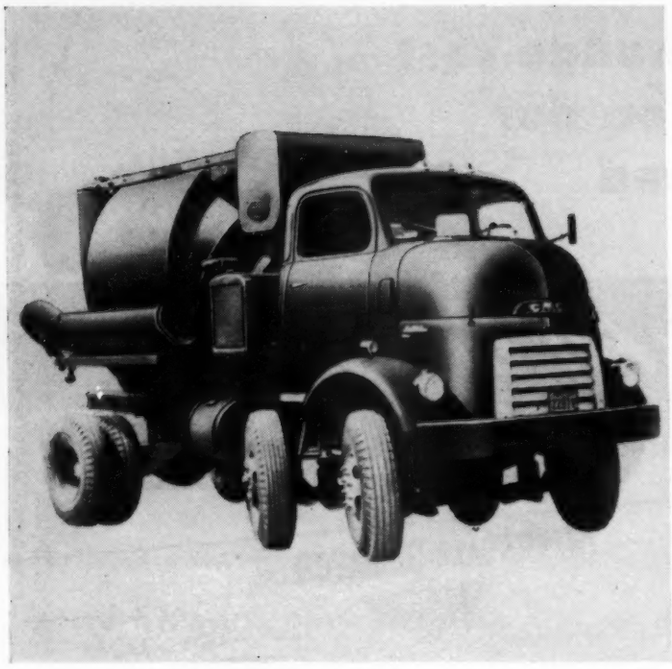
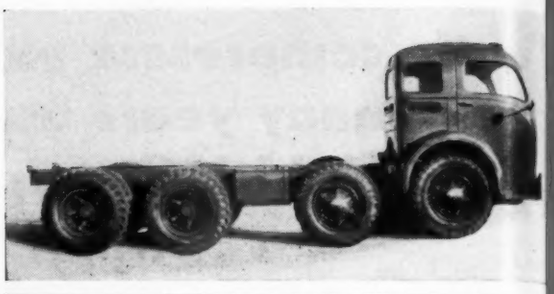




With tandem steering axle, more engine and gear c weight is shifted to front axle permitting more p load on rear axle. Pictures show various applicatio

Tandem Front Axle Boosts Payload

Added axle coupled to front axle by walking beams results in tandem steering axle with up to 30,000 lb gross weight

DESIGNED to permit greater payload on straight trucks while still observing maximum weight restrictions of most states, the "Rex Spangler" tandem steering axle is now being manufactured by Hahn Motors, Inc., Hamburg, Pa., and marketed by Chain Belt Co., Milwaukee, Wis.

The conversion consists of an additional steering axle which is coupled to the standard front axle of any straight truck by walking beams. The result is a tandem bogie that steers all front wheels with center poise steering. Because of the walking beam construction, there is free articulation of the wheels. True center poise steering permits shock-free steering, regardless of the position of the wheels due to any load conditions.

Adding approximately 2100 lb to the gross weight of the truck, the unit results in a beneficial chassis weight shift that permits additional payload on the rear axle. This is due to the front suspension point being moved farther behind the weight imposed by the engine and gear case. While adding weight to the front, this reduces weight on t rear axle to permit additional paylo

Capacity of the front bogie depe entirely on the capacity of the ax used, ranges from 20,000 to 30,000 The unit itself has a capacity of 30,0 lb. Each axle carries an equal sh of the load under all conditions, a p requisite by law in most states. T four wheels of the bogie are a equipped with brakes to comply w state motor vehicle laws. Rubber pa boloids are used in the suspension improve the riding qualities of t unit.

Tandem spacing is 55 in. from t center line of the first axle to the s ond axle. For load distribution p poses, the distance between the ce of the front tandem and the center the rear tandem is used as the wh base, because these are the points which the payload and the truck fra load is imposed on the suspens system.

Stresses in the truck frame are duced by two means: by shortening wheelbase because of the location the mounting bracket, the span truck frame between supports is l ened and the frame thereby stren ened; for any given deflection o wheel dropping in a hole or going o an obstruction, the truck frame r only one-half of what it normally wo be with a single front axle.

Use of the conversion unit makes change either in the position of front axle or in the turning radius the truck.

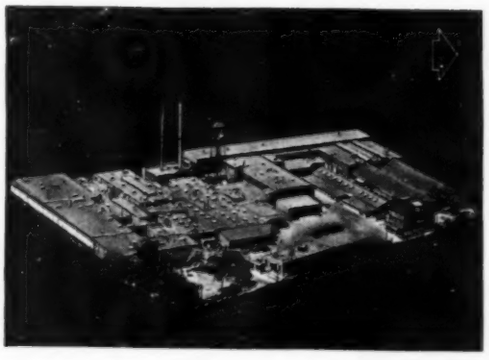
Thompson increases facilities

to better serve the automotive industry

In order to keep pace with demands for improved chassis and steering parts, including the new, revolutionary Thompson-engineered ball joint for front suspension, we have added two new manufacturing plants at Fruitport, Michigan and at Portland, Michigan.

These two new plants enable Thompson to give you even better service and deliveries.

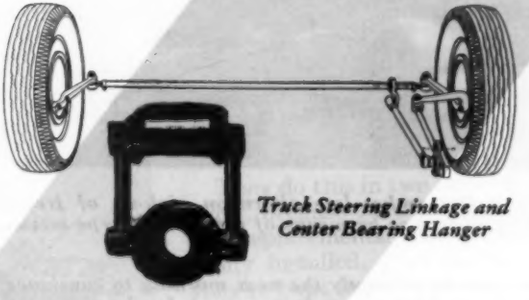
We invite you to investigate the numerous advantages of working with the expanded Michigan Plant of Thompson Products . . . of having your engineers work with the experienced Thompson engineers in solving your problems. Write, wire or telephone Thompson Products, Inc., 7881 Conant Avenue, Detroit 11, Michigan. WA 1-5010.



DETROIT MICHIGAN PLANT

Passenger Car Steering Linkage

PORTLAND MICHIGAN WORKS



Truck Steering Linkage and Center Bearing Hanger

FRUITPORT MICHIGAN WORKS

Ball Joint for Front Suspension

You can count on

Thompson Products

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Teletype in Buyers' Service Boosts Business 100%

Montreal Ottawa Express provides unique buyers' service for large department store. Place orders direct by teletype. Pick up without delay and cut store inventory. System ups business volume for fleet

Carrier's trailer makes late afternoon pick-up of freight ordered by consignee by means of carrier's teletype service

Delivery is made promptly the next morning to consignee in time for day's business, reducing need for large inventory

SOME companies who use th Teletype system of communicatio between their own terminals, fail t get the maximum of service out o it. Montreal Ottawa Express Co. Lim ited, however, operating between th cities of Montreal, Que., and Ottaw Ont., has found a new use for Tel type installation.

Giving their customers a speci buyers service, they have been abl to put the Teletype to good use, build ing up business over 100 per cent i less than twenty-four months' time.

One of the best customers in Ottaw is the large department store of A J. Freiman Ltd. This company ha been able to reduce its inventar considerably by using the Montrea Ottawa Express Co. Buyers Servic Here is a typical sample of how works. The purchasing manager o Freiman's will telephone the Ottaw office manager of the Express Co and ask him to order 150 rain coa of various sizes and materials fro Sport-Togs Inc. in Montreal, givin their order number.

That's all there is to it as far a the A. J. Freiman Ltd. are con cerned. The Montreal Ottawa Ex press Company Ltd. does the re Immediately upon receipt of th telephone order the manager w transmit the order to Montreal of direct by Teletype. The Montreal o fice upon receipt will send a man o to the Sport-Togs Co. Inc. and pla his order direct.

Promptly at 4:30 the pickup tru will back up to the factory shippi entrance and pick up the A. J. Fr man order. This is carried to th terminal in the usual pickup syste manner. It is then loaded into th Ottawa-bound trailer truck.

Around 8:45 the same evening th

(TURN TO PAGE 124, PLEASE)

"Nobody home!"

I find that fewer of my cars and trucks are down in the shop since I've insisted that Genuine Ford Parts be used in all repairs.

They're made right to fit right in your Ford car or truck. You can be sure of that because Genuine Ford Parts are made to the exact specifications set by the same men who designed the Fords in *your* fleet.

They're Ford tested and proved by Ford engineers, on Ford test tracks in Dearborn and Arizona, before being approved for manufacture. That's why you can be sure Genuine Ford Parts are *right* for Fords.

● Yes, sir! Genuine Ford Parts sure help keep a fleet rolling.

They do this in two important ways. First, because they're built to be perfect replacements, they're quickly and easily installed. And second, because they're built to last and *last*, your fleet spends less down time in the shop . . . and more profitable time on the road . . . when you use them.

You really save when you keep your Fords *all* Ford!

Keep your fleet on its feet with . . .

GENUINE Ford PARTS

Available at all Ford Dealers and the selected independent garages where you see this sign.

1953 New Truck Registrations by Makes by States*

STATE AND MONTH		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Pon-tiac	Reo	Studе-baker	White	Willys	All Others	Total
Alabama	June			618		2	135		373		147	99		8				24	32	9		1,447
	6 Mos.	12	1	4115	10	7	922	7	2379		1082	643	1	79			21	231	133	87		9,726
Arizona	June			217	1	1	53		171		92	74	2	3		1	4	22	2	14		957
	6 Mos.			1318	5	5	352		890		456	394	15	27		2	31	139	34	103		3,771
Arkansas	June			670	4		81	1	414		178	115		6			2	45	10	10		1,536
	6 Mos.	2		3761	6		659	4	2467		1220	740		8		1	11	292	44	100		9,316
California	June	8	1	2440	20	13	584	3	1224	13	726	502	23	29	10	11	10	164	119	146	8	6,054
	6 Mos.	73	3	13337	165	69	4346	7	7649	20	4136	3320	114	135	20	31	127	1093	327	1023	78	36,093
Colerado	June	2		287			58		204		98	86	1	16			1	17	8	39		817
	6 Mos.	20		2023	59	11	459	5	1414	10	612	747	8	33	8		17	167	35	234		5,898
Connecticut	June	2	4	252	2	5	93	2	180		84	106		14			7	26	35	9	2	823
	6 Mos.	16	21	1333	35	45	473	21	915		366	448	1	72		1	38	143	158	115	5	4,298
Delaware	June		1	81	1		23		37		13	25		1			1	8	1	2		194
	6 Mos.	4	6	613	4		150	5	323		93	169		9			9	51	8	13		1,457
Dist. of Columbia	June	3		116		7	13		44		34	22		4			5	1	3	5		257
	6 Mos.	6	1	500	13	22	340	1	242		192	127		12		1	17	6	8	19		1,507
Florida	June			674	3	3	159	1	384		147	134		15			9	51	25	66		1,671
	6 Mos.	14		4464	32	28	1276	11	2899		1168	1014		216		3	66	535	166	433	12	12,337
Georgia	June		1	757	1		154		429		190	133		1		3	2	58	15	10		1,794
	6 Mos.	7	2	4821	16	10	1176		2976		1280	1052		60		6	23	475	109	92	2	12,107
Idaho	June			200	1		73		147		90	65	8	3	1		2	18	10	44		668
	6 Mos.	2		8415	210	52	2496	5	5678	5	1863	3458	3	104		13	65	661	354	337	51	23,791
Illinois	June	2		1186	21	3	267		745	4	260	440	2	20		2	10	74	40	39	3	3,118
	6 Mos.			1241	11	2	385	1	878	2	521	598	26	32	8	2	8	151	20	270	6	4,102
Indiana	June	5		984	11	12	226	5	690		196	379	1	7			9	120	44	35	1	2,728
	6 Mos.	14		4539	53	40	1331	12	2974	1	1076	1957	1	73		3	58	591	301	194	17	13,238
Iowa	June			596	5	7	95		350		84	209		4				40	16	23		1,429
	6 Mos.	3		3694	40	21	741	1	2841	6	638	1719	3	23		5	26	266	96	126	17	10,286
Kansas	June			663	2	2	106		413		185	253				3	2	44	12	18		1,703
	6 Mos.	1		4010	24	10	684		2493		1066	1429		8		6	12	282	74	164	2	10,266
Kentucky	June			631	4	6	91		417		162	142					1	53	9	49		1,568
	6 Mos.	1		3723	13	15	702	9	2279		912	930		23		5	18	288	54	219		9,101
Louisiana	June			666	3	2	101		410		151	139		3				40	11	12		1,538
	6 Mos.	8		4043	16	12	814	1	2615		1013	1010		29		3	6	372	43	131	1	10,117
Maine	June		2	189	2	2	54	2	110		45	55		10			1	21	3	17		513
	6 Mos.	9	7	982	18	7	305	2	703	1	326	329		55		3	9	134	20	134	6	3,099
Maryland	June	2		293		1	87	2	197		73	108		9		1	3	17	31	7		831
	6 Mos.	9	39	2010	8	17	821	9	1397	2	471	618		87		2	26	133	125	76	2	5,852
Massachusetts	June	3	8	337	7	19	133		191	1	104	174		31		1	19	48	31	19	4	1,138
	6 Mos.	52	47	1979	42	68	706	11	1331	2	474	653		148		12	72	245	148	168	11	6,169
Michigan	June	10	1	1267	14	32	325	28	1051		326	195		16		2	28	48	22	27	1	3,393
	6 Mos.	38	2	7808	84	140	2394	105	5506	1	1841	1355		65		10	140	331	150	204	8	20,182
Minnesota	June			417	2	10	115		358	2	128	241	2	11			3	35	12	7		1,343
	6 Mos.			3429	29	30	928	13	2661	15	756	1542	2	31		6	38	305	67	139	6	9,997
Mississippi	June			496			69		305		151	112		3				36	4	12		1,188
	6 Mos.			3376	1		608		2046		1095	807		15		1	1	241	23	86		8,300
Missouri	June	1		935	14	52	146		645		285	196		9			3	57	48	20		2,421
	6 Mos.	8		6019	32	98	1202		3638		1645	1449		29		1	34	404	210	154	1	14,922
Montana	June			258	2	1	44		144		67	86	2	1			3	19	4	49		680
	6 Mos.	1		1359	5	2	234	1	956	2	330	570	18	15			11	137	24	255	7	3,927
Nebraska	June			444	10	1	51		274	2	132	173	1	3			1	19	6	17	10	1,144
	6 Mos.	11		2557	65	6	390		1880	6	644	1151	12	19		3	9	181	53	216	24	7,227
Nevada	June			63			12		31		32	8		1				9		9		166
	6 Mos.			353	1		155		229		163	79	1	4			1	68	2	67		1,123
New Hampshire	June		1	98	1	1	27		67		31	43		2			2	4		20		297
	6 Mos.	1	7	534	3	5	141		344		135	155		27		2	16	50	6	96	1	1,523
New Jersey	June	8	20	662	11	12	162	10	456	1	176	181		54		1	4	40	33	34	2	1,887
	6 Mos.	42	160	4069	50	79	1111	43	3158	6	1083	1127		189		8	44	276	342	180	6	11,973
New Mexico	June	1		211	1		28		132	1	81	57	3	11				24	13	12		575
	6 Mos.	1		1195	10		184	4	722	1	327	260	9	40		1	12	113	33	82	1	2,995
New York	June	91	66	1507	19	7	600	12	1091	1	361	571		93		3	53	112	88	98	6	4,779
	6 Mos.	222	412	7608	156	60	3287	52	5435	13	1984	2856		473		16	249	504	458	561	67	24,413
North Carolina	June	1		735	2		146	2	457		171	156		19			2	61	28	41	1	1,822
	6 Mos.	12		4888	11	25	1066	3	3128	1	1292	1183		170		5	15	411	235	214	6	12,665
North Dakota	June			110	1		20		76		30	75						5	1	6		324
	6 Mos.	1		808	2		199		898		197	600		5			1	73	6	42	3	2,835
Ohio	June	9		1137	15	24	344	5	862	1	246	440		18			18	81	66	60	1	3,327
	6 Mos.	66	8	7145	83	99	2568	52	5091	9	1533	2839		173		11	168	531	537	381	20	21,314
Oklahoma	June	1		704	2	2	107		429	3	210	163		1				44	23	20		1,709
	6 Mos.	4		4456	6	17	774		2891	15	1318	1183	3	15		1	19	304	121	107		11,234
Oregon	June	9		403	14	2	126	3	251		189	161	6	7	4		6	33	30	58	1	1,305
	6 Mos.	21		2091	55	10	745	5	1805	4	836	980	51	72	33	3	29	168	98	436	8	7,440
Pennsylvania	June	7	69	1468	19	10	513	32	1170		318	547		45		6	25	109	92	55		4,488
	6 Mos.	85	306	7633	101	72	2968	63	5244	1	1684	2992		300		17	151	513	471	395	18	23,014
Rhode Island	June			70	1	2	36		43		15	42		4			1	11	9	1		235
	6 Mos.	24	2	412	10	12	180		312	4	78	180		19			11	55	24	14		1,335
South Carolina	June			447		2	85		256		108	67		3				28	4	3		1,003
	6 Mos.	1		2857	2	3	519		1550		618	420		19		2		185	46	47	4	6,073
South Dakota	June			99			31		69		40	68				1		7		14		329
	6 Mos.			858	22	1	245	1	653		245	613	1			4	2	87	9	131	1	2,073
Tennessee	June	1		590	3	1	127	3	406		155	145		8			2	36	18	10		1,506
	6 Mos.	2	6	4532	17	8	1116	19	2750		1190	1077		61		2	22	287	103	123		11,318
Texas	June	14		2761	16	5	476	2	2067	1	508	579	2	23		3	9	175	88	132	1	6,866
	6 Mos.	75		16524	85	21	2812	13	10831	5	3438	3633	13	140		17	71	1142	620	481	9	39,930
Utah	June			181	5		26		83		44	46		2				4	3	6		420
	6 Mos.	1		904	16		194	2	669	3	259	321	7	17	3		11	51	21	105	2	2,566
Vermont	June			63	1		18		25		26	28						2		10		173
	6 Mos.		7	396	4		146	2	188	1	140	173		6		1	7	37	5	119	5	1,237
Virginia	June	5		602	2	2	127		419		135	160		10			2	44	35	23		1,586
	6 Mos.	18	8	3228	9	18	961	3	1976		861	814		83		4	48	301	156	159	3	8,659
Washington	June			353	9	2	139		273		193	203	3	13	1	2	2	30	20	50		1,253
	6 Mos.	2		2177	23	15	799		1679	2	925	997	59	70	7	4	30	165	118	253	11	7,338
West Virginia	June			298	1	2	80		199		90	56		30				21	12	23		813
	6 Mos.	4		1692	5	16	542	4	1189		460	417		60		8	4	112	44	234		4,791
Wisconsin	June			443	6	8	103	1	402	7	140	201		7			10	36	17	17	4	1,402
	6 Mos.	7		3220	33	31	909	8	2293	33	770	1480	1	39		4	74	263	128	214	20	9,507
Wyoming	June			122			26		84		52	51		2				9	2	26		374
	6 Mos.			773	1		149		518	2	248	307	2	14		3		52	12	197		2,279
Total	June, 1953	185	174	28801	259	263	6695	114	19255	37	7509	8311	58	580	16	40	262	2030	1133	1434	45	77,196
Total	June, 1952	128	101	25482	224	216	8620	57	15852	29	6808	7585	42	606	20	41	268	2584	874	1673	191	71,471
Total	6 Months, 1953	919	1045	173822	1701	1229	46664	505	115581	173	45058	52895	351	3403	77	233	1878	13602	6379	9730	439	475,494
Total	6 Months, 1952	799	802	134206	1812	1524	47348	392	91569	262	38953	44905	351	3584	118	286	1527	14230	5690	9198	1376	398,932

* Data from R. L. Polk & Co.

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FEDERAL TRUCKS

Custom Built for Lowest Lifetime Cost

The Great Highway Robbery . . . Or Is It?

Continued from Page 65

federal excises, which the records show were never intended to be permanent or to be used for highway improvement. The argument:

Federal highway aid is a traditional as well as constitutional obligation of the national government because of the contribution of highways to the national defense, the delivery of the mails, interstate commerce, and the general welfare. Therefore, such aid should come out of general funds just like defense spending does. Why saddle it all onto the motor vehicle owners? When these excises are repealed, as most everyone agrees they should be, then where would federal aid be if it were tied to the excises? The comment is frequently heard that most proponents of linkage "Want to save their cake yet eat it." In other words they would eliminate the excises, but still use them to justify more federal aid.

Those who oppose the theory of linkage believe it to be dangerous. The National Highway Users Conference is one of the groups that has voiced the fear that this would lead to domination of federal powers over states. Doubling or quadrupling the federal-aid program through linkage would go in that direction, certainly, and there are many who believe that this would represent an invasion of states' rights as well as an invasion of a tax field traditionally belonging to the states.

Yet many individuals feel like Congressman Myron V. George, of Georgia, who recently expressed his chagrin at the idea of penalizing states for diversion, in the following manner. "It seems to me we are in a very awkward situation when we have the diversion of between 300 and 400 million dollars with the tremendous road problems we have in the United States, for us to ask any state to stop a minor amount of diversion within the state. If we clean our own skirts, then I think we can move in."

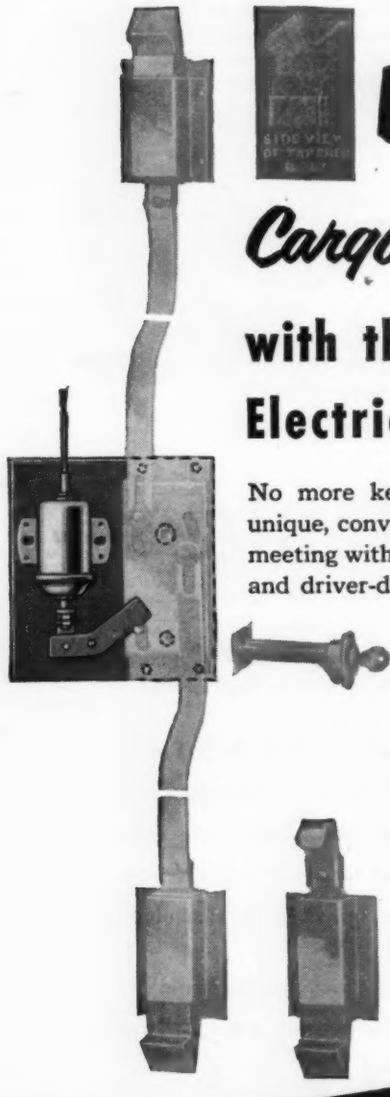
Karl Richards, secretary of the Highway Policy Committee of the Automobile Manufacturers Association, asserts that his organization argues against federal highway user taxes on the ground that history demonstrates how; when two government agencies are in the same tax field, the stronger agency finally takes over. He points out that once the federal government is given the right to levy special taxes on highway users as a class, we have opened the door to unlimited expansion of both federal highway taxes and federal highway aid. The AMA typifies the thinking of many other groups in this respect and also in the belief that the street and highway problem is primarily a local and state responsibility and is best handled by these agencies.

Support of linkage in the past has been pretty well limited to congressmen and certain individuals as most national organizations with an interest in highways have shied away from the idea. However the American Municipal Association, and the Associated General Contractors recently adopted resolutions advocating linkage and the American Association of State Highway Officials associates excises with federal aid in a recent resolution calling for making federal aid not less than the federal gas tax revenue.

Eliminate Federal Aid?

ONE of the most startling developments to take place has been the growing talk, started by a suggestion

(TURN TO PAGE 108, PLEASE)



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Great Highway Robbery

Continued from Page 106

of a group of State Governors, about eliminating federal aid entirely (except for a few sparsely populated "land-grant" states) at the same time cancelling the 2-cent federal gas tax so the states could assess this tax themselves. Actually this would put the states several hundred million dollars ahead in highway revenues. One New England state official explains it in this fashion. "There is no reason why our state should not build its own highway facilities without aid from the federal government. The federal gasoline tax should be abolished, leaving that source of revenue to the state governments. If we had available to us the monies paid in federal taxes on motor fuels consumed in this state, we would be well on our way to providing the highway needs of this state and its minor political subdivisions."

This is linkage in reverse. It holds that federal excises and aid go hand in hand, and that to do away with one would automatically justify doing away with the other.

However there is a strong opinion to the effect that many states would not pick up the 2-cent tax, once it was dropped by the federal government. Those who point out that there never has been any connection between federal excises and federal aid see no particular worry here, since, on this basis, dropping the 2-cent levy should not effect either federal or state spending on roads.

One congressman had a novel suggestion—that the federal government, instead of dropping the tax, just give the proceeds to the state exactly as it's collected in each state, with no strings attached and with no required matching money as under the federal-aid system. The suggestion, however, met with no favor—undoubtedly because it would mean the end of "aid," to the extent that little-traveled states would receive little or no assistance in financing their inter-regional highways.

Or Increase It?

VARIOUS justifications have been given from time to time for federal aid. The city manager of Cincinati, for instance, argued before Congress this year that his city had the authority for and money ready for a $150-million urban expressway construction program but that state and federal highway money was not available to match Cincinnati's money. This availability of money, in his belief, justified increasing federal aid. Numerous state highway officials have cited the lack of state money as the jutsification for increasing federal funds at the same time giving two dollars for every state dollar instead of the 50-50 basis now in effect.

Besides the lack of or overabundance of state and local money, many groups are using the excise tax revenues as a basis for expanding federal aid. In other words, the linkage theory.

But seldom is heard a plea for equating federal aid to what is necessary to discharge the federal responsibility relating to national security and interstate commerce. The Constitution of the United States calls for Congress to establish post roads and that obviously was the primary intent of the original federal-aid road act. Since then our concept of needed federal functions has changed, and although we have had no constitutional amendment saying as much, it is generally agreed that federal aid to highways is justified as a means of assuring an integrated network of major highways.

The proponents and opponents of linkage, federal aid, excise taxes, and special consideration for certain segments of the nation's 33-million-mile

(TURN TO PAGE 110, PLEASE)

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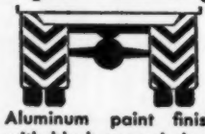
Constructed *entirely of steel*, Anthes splash guards are a real piece of equipment. Made of 18 gauge steel they outlast ordinary flimsy guards *many times*. Embossed chevrons and embossed edges add *greater* strength. Ten-gauge steel mounting brackets are designed with an automatic stop which prevents guard from swinging forward too far. Available in 30", 36" and 40" sizes. Meet all state law requirements. Order from your jobber or write Anthes Force Oiler Co., Fort Madison, Ia.



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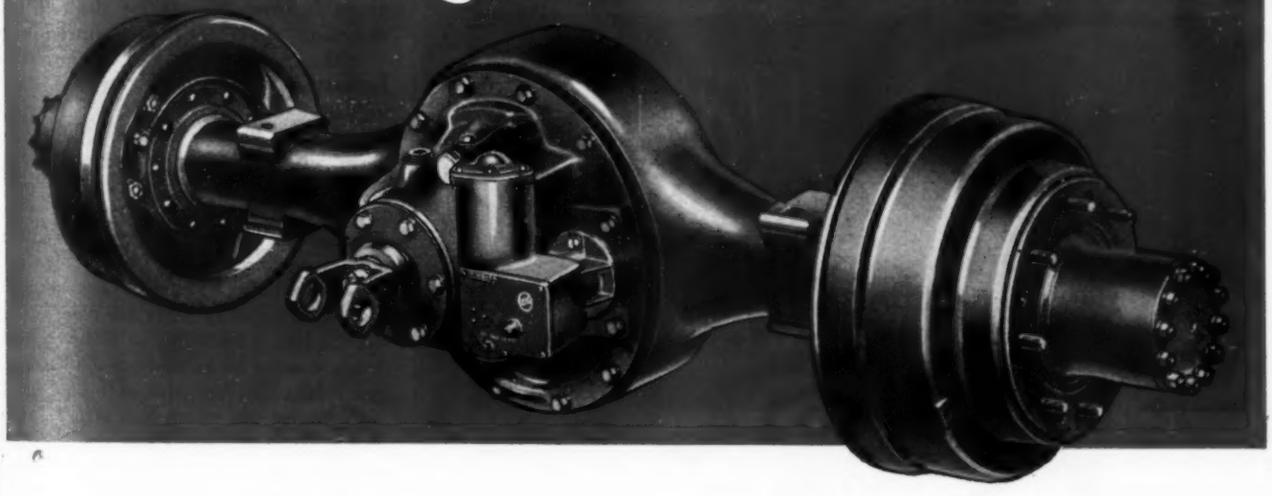

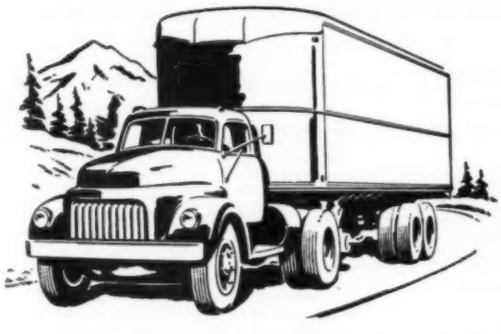

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Great Highway Robbery

Continued from Page 108

road system would do well to remember this fundamental principle, at once logical and soundly American in concept: Federal aid should be directed only to highway improvement essential to national defense and to maintaining interstate commerce.

Despite the talk about greatly increased federal-aid programs, and more money for the interstate network, the urban system or local rural roads, it is fairly certain that this economy-minded Congress and probably those to come for the next few years will not make significant increases in federal outlays for roads. Toll road construction and greatly expanded state highway revenues have "taken the heat off" while total highway building has been edging up each year. Therefore it is up to highway users and others interested in accelerating highway programs to prod their state and local units of government.

Those on both sides of this linkage question are just getting their danders loosened up now in anticipation of the bigger show that starts next year when Congress will start public hearings on the 1954 federal-aid highway act. The new federal commission on overlapping state and federal functions soon to be set up at President Eisenhower's request will undoubtedly give the linkage debators another workout.

Early this year Congressman Harry McGregor, Chairman of the House subcommittee on roads, opened up the whole subject of highway financing with a series of hearings and Senator Case, Chairman of the Senate Roads Subcommittee, has indicated interest in doing something similar before the year's end.

The McGregor Committee hearings concluded in July after three months and will form the basis for a new Federal-aid Road bill to be drafted by chairman McGregor and introduced into the second session of Congress in January or February of 1954. The hearings brought forth the usual number of suggestions for departure from the norm but the main body of testimony favored continuation of the federal role in substantially its present form with considerable sentiment for shifting more federal aid to the 38,000-mile interstate system. Whether or not federal excises on highway users are continued, and it looks like they will be, there does not seem to be much likelihood of any substantial increase in federal authorizations, but there is a strong possibility of spending more of what is available on the more heavily traveled routes. So the cauldron of controversy over highway finance will continue to boil.

Here's How Associations Feel

It is interesting to note the positions taken by various national groups and government agencies on this question of automotive excises and federal highway aid. The author has made a special survey of formal and informal viewpoints on this matter and they are summarized as follows:

AIR TRANSPORT ASSOCIATION OF AMERICA—Supports linkage of highway federal aid and total excises with exception of excises on aircraft tires, tubes, gasoline, and lubricating oil sold for use in aircraft.

AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS—Although policy statements of 1937 and 1942 favored cessation of federal automotive excises and thus indirectly disfavored linkage in view of the Association's advocacy of federal aid, a resolution adopted at the 1952 annual meeting now calls for increasing federal aid "to an amount not less than the full amount collected by the federal government as a federal tax on gasoline." The resolution justifies this on the basis that "funds are being collected by the Federal Government in the form of gasoline taxes in a sum greater than is being returned to the respective states for highway purposes and whereas, such procedure is indicative of diversion of highway funds and is in violation of the principle of anti-diversion which has been recognized by all highway authorities as a basis for equitability in the field of highway finance . . ." In previous years, too, representatives of the Association, testifying before Congress, have used the linkage theory to justify more federal aid.

AMERICAN FARM BUREAU FEDERATION—Opposes linkage and favors repeal of excises as soon as it can be accomplished without unbalancing the federal budget.

(TURN TO PAGE 112, PLEASE)

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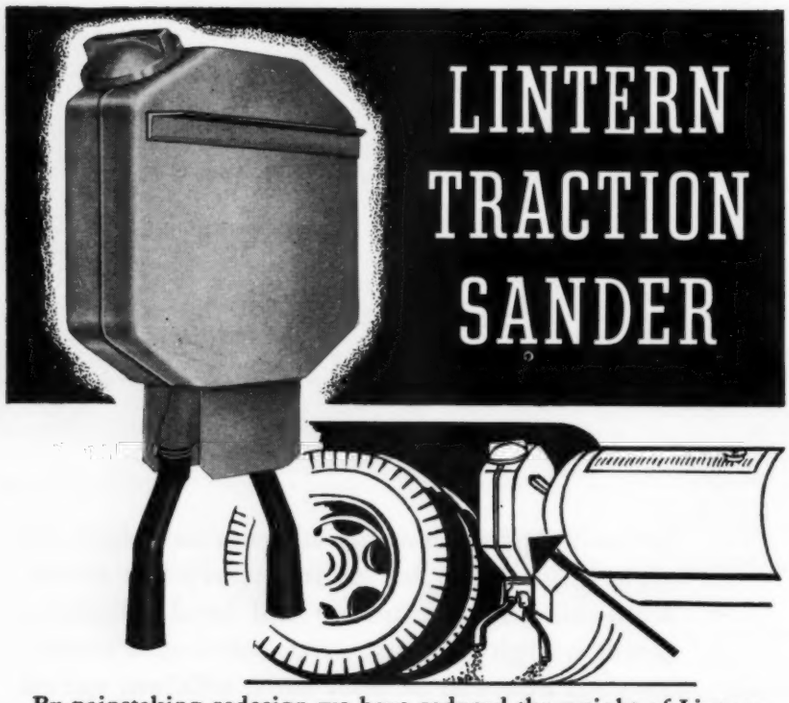

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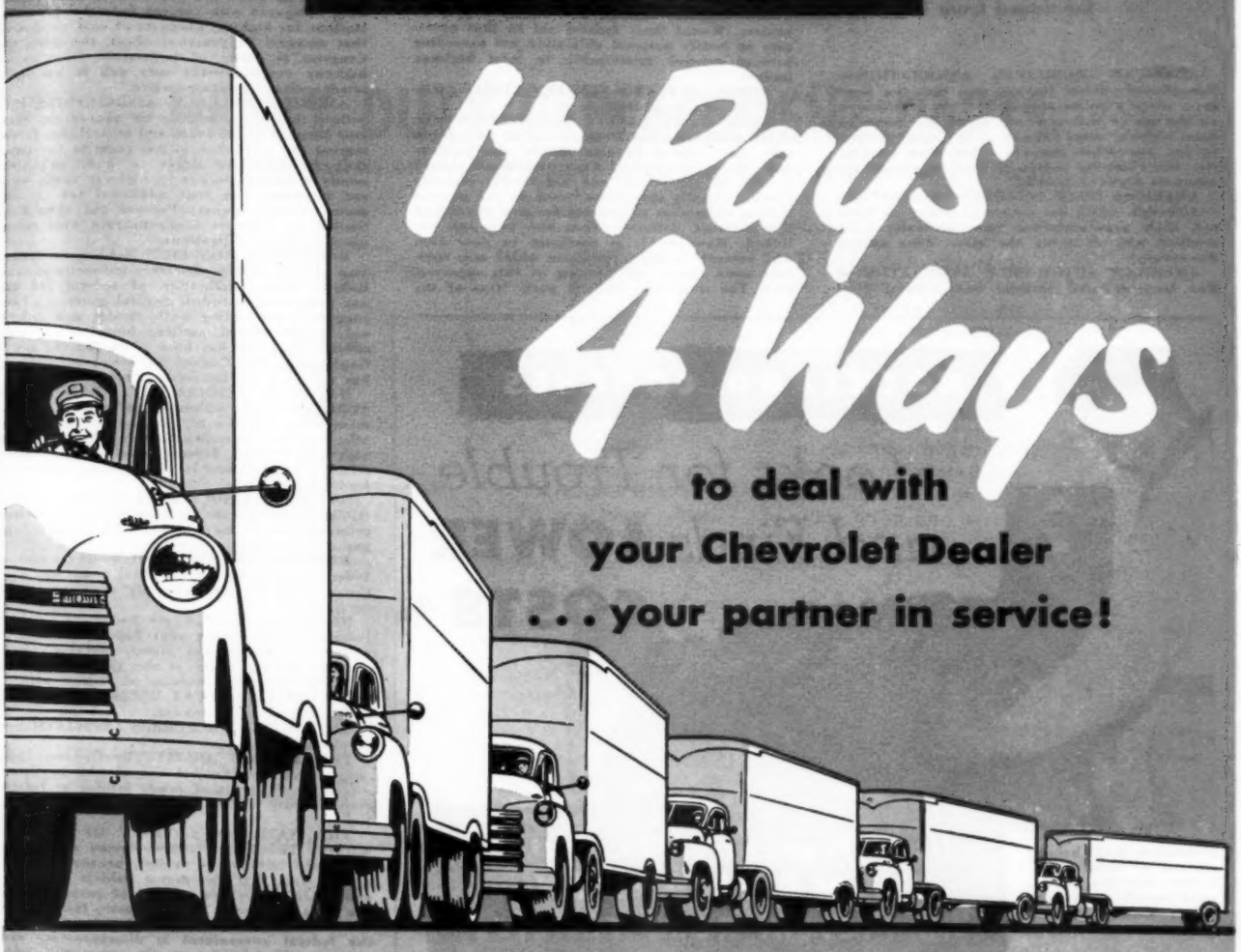


1 A well-balanced stock of genuine Chevrolet precision-built parts, *that*

2 Help reduce fleet maintenance time and operation costs, *thus*

3 Keep your vehicles on the highways *plus*

4 Expert help in solving your service problems

CHEVROLET

Your Chevrolet Dealer is ready, willing and able to give you all 4

See him today!

Great Highway Robbery

Continued from Page 110

AMERICAN MUNICIPAL ASSOCIATION—Recommends direct linkage and that the Congress adopt a policy calling for "the prohibition on the use of federal funds which are collected from highway users for use on any other project or for any other purpose other than meeting the overwhelming needs of our presently inadequate highway system."

AMERICAN ROAD BUILDERS ASSOCIATION—Although ARBA has no stated policy on linkage, their representatives have generally been credited with fostering the idea. (See earlier discussion.)

AMERICAN AUTOMOBILE ASSOCIATION—Has long opposed linkage and believes that federal aid is a legitimate and traditional charge against general taxes and opposes levying of federal excise taxes on motor vehicles, accessories, gasoline and fuel.

AUTOMOBILE MANUFACTURER'S ASSOCIATION—Opposes linkage and favors repeal of excises. Would limit federal aid to that necessary to justify national obligation not exceeding present general relationship to total highway budget.

AMERICAN PETROLEUM INDUSTRIES COMMITTEE—Opposes linkage.

AUTOMOTIVE SAFETY FOUNDATION—Official policy adopted 1944 and since unchanged says that federal imposts against the highway user are an invasion of a tax field which should be left to the states, and federal-aid highway funds normally should be based on the general federal obligation to provide for post roads and the national defense. Thus the two are not linked. However, it is pertinent to note that ASF recently issued a statement which may indicate some change in thinking of this organization. The statement reads in part, "One of the thorniest fiscal issues ahead is confronted by the Congress itself, which, during the depression, began to levy 'emergency' taxes against vehicles, tires and petroleum products. These revenues in 1952 are expected to total $2-billion, compared with current federal aid authorizations for highway purposes of only one-fourth that amount. In practical effect, therefore, the Congress is guilty of large-scale diversion of highway revenues—the very evil it has legislated against in state practice."

AMERICAN TRUCKING ASSOCIATIONS, INC.—Says there is absolutely no connection whatever between excise taxes and federal aid. Favors leaving the collection of gas taxes to the states thus enabling the states to have collectively nearly a billion dollars in highway funds without imposing one cent additional tax on any motor vehicle owner. Federal aid should be limited to amounts commensurate with recognized national obligations.

GOVERNORS CONFERENCE—Urges elimination of excise taxes, therefore indirectly opposes linkage since elimination of federal aid has not been recommended. Several governors have suggested eliminating both excises and federal aid, as mentioned earlier; however, no such official viewpoint has been given for the entire Conference. The Council of State Governments has endorsed the Conference policy.

NATIONAL ASSOCIATION OF MANUFACTURERS—Favors withdrawal of federal government from taxation of gasoline and lubricating oils, and recommends abolishing federal aid to highways, limiting federal activities to research, stimulus to state and local agencies, and overall leadership.

NATIONAL ASSOCIATION OF MOTOR BUS OPERATORS—This organization, representing primarily inter-city operators is strongly opposed to linkage.

NATIONAL FARMERS UNION—Urges greater federal appropriations for rural roads and continuation of excises, indirectly supporting linkage.

NATIONAL GRANGE — Indirectly opposes linkage in advocating that federal automotive excises be left to the states, favoring repeal of such federal levies at the earliest practical date, but favoring retention of federal aid.

NATIONAL HIGHWAY USERS CONFERENCE—Strongly opposes linkage.

RUBBER MANUFACTURERS ASSOCIATION—Opposes linkage.

THE ASPHALT INSTITUTE—Opposes linkage, saying that federal aid should be determined on the basis of needs insofar as federal responsibility is concerned, with no relation to excises.

THE NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS—Favors elimination of federal automotive excises, because, in view of the fact that the motor vehicle user pays general taxes for the support of government in the same manner as other citizens, the exaction of excise taxes from motor vehicle owners by the federal government is discriminatory and provides added burdens to the commercial vehicle operator. The Council favors continuation of highway federal aid. Thus it indirectly opposes linkage.

TRUCK-TRAILER MANUFACTURERS ASSOCIATION—Opposes linkage.

THE UNITED STATES CONFERENCE OF MAYORS—Favors linkage, recommending that the federal level of highway expenditures should generally approximate the amount of revenue received from the federal gasoline and oil imposts.

END

Please Resume Reading Page 66

ROCKLAND COACHES

Looks for Trouble and Finds **LOWER COSTS**

Magnaflux bath being applied to crankshaft. Defects that are otherwise invisible become clearly marked indications.

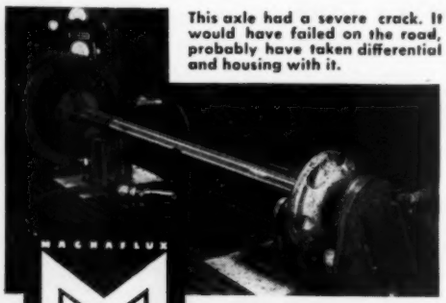
Uses Preventive Inspection with **MAGNAFLUX** *to Prevent Road Failures*

A broken spindle can destroy a bus — and injure passengers. Inspection with Magnaflux "spots" approaching failure before it can do damage.

Rockland Coaches, Spring Valley, N.Y., has found that regular preventive inspection with Magnaflux practically eliminates road failures. It is now an "indispensable" part of operations, that pays for itself many times over by keeping their fleet of 78 busses on the road earning money, *more profitably.*

For example, 8 to 10 axles a year used to break on the road. Costs for replacement, loss of revenue, etc., averaged about $300 per failure. *In two years since using inspection with Magnaflux not a single axle has failed on the road.*

Crankshaft breakage that often destroyed or severely damaged an engine is almost a thing of the past. Even new shafts are Magnaflux-inspected and defective ones are returned to the manufacturer.



This axle had a severe crack. It would have failed on the road, probably have taken differential and housing with it.

Differential gears, connecting rods, steering knuckles, and spindles—even engine bolts—are inspected. In every case, unpredicted failure has been reduced to a negligible factor.

INSPECTION WITH MAGNAFLUX IS AVAILABLE TO YOU THROUGH MAGNAFLUX' OWN LABORATORIES AS WELL AS MAGNAFLUX-LICENSED OVERHAUL SHOPS. WRITE US FOR THE LOCATION OF THE ONE NEAREST TO YOU.

MAGNAFLUX CORPORATION

MAGNAFLUX CORPORATION

7308 W. Lawrence Avenue • Chicago 31, Illinois

New York 36 • Cleveland 15 • Detroit 11 • Dallas 9

Pittsburgh 36 • Los Angeles 58

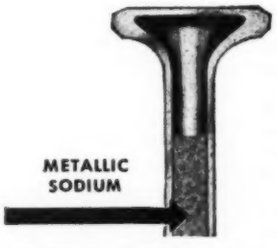
HEAVY DUTY REPLACEMENT PARTS

(All widely used as original equipment by car, truck, bus and tractor builders.)

HARD-INLAY EXHAUST VALVE
Aircraft valve steel—aircraft durability.

"500 BRINELL" CYLINDER SLEEVE
2½ times longer service. (average)

YOU can count on Thompson for the best in heavy-duty engine replacement parts. For over half a century Thompson Products has been making precision parts of finest steels and other metals that must withstand engine heat, friction, motion, wear and stress.



SODIUM-COOLED (aircraft type) EXHAUST VALVE
Highest cooling efficiency.

"CL-77" HEAVY-DUTY BEARING
Mileage rating 3½ times better than babbitt.

STEEL-BELTED PISTON
Cast in steel belt controls expansion.

ROTOCAP
Positive valve rotation; increases life 2 to 5 times.

U-FLEX PISTON RING
Revolutionary—greatly improved cylinder wall lubrication and oil economy.

HARD-INLAY VALVE SEAT
Face inlaid with super-hard, patented alloy.

Thompson Products, Inc.

SERVICE DIVISION—2209 ASHLAND RD., CLEVELAND 3, OHIO

4 Star Safety Program McLean Style

Continued from page 67

formation which a new driver should have.

During this period the Trainees receive no pay whatsoever, although they are provided with meals and sleeping quarters. If a candidate for a driver job is unwilling or unable to complete this two-weeks' training, this is an indication that such candidate would be undesirable for long range employment.

The second phase of driver training begins immediately after completion of the training school. The new man is assigned as a Driver Trainee to a Driver Trainer, and the road operation is confined to trips South of Winston-Salem that can be consummated in a ten-hour period. At this point we should explain that most of McLean's long-range operations are set up for sleeper cab operation with a two-man driver team. However, our shorter runs are handled by one man operating from terminal to terminal. During the first two weeks of this duty the Trainee receives $5 a day and lodging, after which he receives a regular driver helper's pay.

In order for one to become a Driver Trainer, in addition to possessing the necessary prerequisites which would qualify him to be a trainer, he must attend a one-week's training school for Driver Trainers. The course content of the Driver Trainer Training School serves to refresh the Trainer with regard to rules, regulations, practices, policies, and procedure; and, in addition thereto, provides him with the best known techniques of driver training. For this additional activity on the part of the Driver Trainer, these men are paid 1 cent per mile in addition to normal driver pay.

Up to this time the Trainee has been in training for a period of one month, at which time he moves into the third phase of the training program. This entails his being assigned to another Driver Trainer who operates a sleeper cab truck. During this phase of the training the Trainee drives in that territory north of Winston-Salem and usually within a 350-mile radius of Winston-Salem. He is assigned to this phase of the training program for a period of two months, during which time the Driver Trainer receives 1 cent per mile additional compensation during the first two weeks and ½ cent per mile additional compensation for six weeks.

Then the final phase of the training program involves the Trainee being assigned to still a third Driver Trainer for a period of three months. During this time the Trainee receives helper's pay; the Trainer receives regular driver's pay. However, if the Trainee completes that three months and a subsequent three-months' period without becoming involved in an accident, the Trainer receives a cash bonus of $100. During this phase of the training program the Trainer and Trainee operate a sleeper cab truck and are subject to be dispatched to any point within the McLean system.

Driver Selection

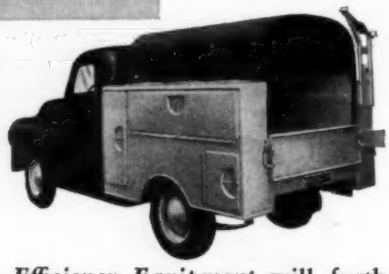
NOW let us go back to the day a potential driver applies at our office for employment. First comes an initial interview with a carefully trained interviewer, who is empowered to screen out obvious misfits from the standpoint of

(TURN TO PAGE 117, PLEASE)

DOUBLE usefulness... DOUBLE carrying space...

MORRISON Carry-All SERVICE BODIES

• Carry-All Model B-750 for ½ ton chassis, equipped with Material Trays in horizontal compartment. 32 cubic feet of added carrying space in 6 compartments. 25 square feet of floor space. Can be fully enclosed with Carry-All Caravan Top or Carry-All Sliding Roof.



A GOOD LOOK at Morrison Carry-All Service Bodies and Carry-All Efficiency Equipment will convince any operator that here is a way to make his light truck investment pay off bigger and quicker. Why be handicapped by the *use* and *space* limitations of conventional-type service truck bodies?

CARRY-ALL SERVICE BODIES are designed for use on *all makes* of ½, ¾ and 1 ton chassis. Easily mounted on old or new chassis. Easily transferred from one chassis to another. *Carry-All Efficiency Equipment* will further "custom" tailor your light trucks to the specific needs of your business.

CARRY-ALL SERVICE BODIES offer many exclusive features in design, construction and adaptability. Public utilities and service industries everywhere have proven Carry-All efficiency and economy of ownership. To know what Morrison Carry-All Bodies and Equipment can contribute to your service truck usefulness write today for prices, detailed specifications and complete illustrated literature. No obligation.

CARRY-ALL BODY DIVISION

MORRISON STEEL PRODUCTS, INC.

681 Amherst Street, Buffalo 7, N. Y.

Also manufacturers of MOR-SUN Furnaces and Roly-Door Steel Garage Doors. Literature on request.

4 Star Safety Program

Continued from Page 114

age, appearance, etc. Next the applicant is required to fill out an unusually detailed personal history statement, which includes any disability benefits that he may be receiving, analyzes his accident record, previous employment record, etc.

Next the applicant is given a battery of specialized tests. These include the Wonderlic Personnel Test, as a measure of general intelligence; the Kuder Interest Test, which is a general index as to the value the applicant places on certain areas of interest; the Bennett Mechanical Comprehension Test, which indicates the applicant's basic understanding of mechanical principles; and the Bernreuter Personality Inventory, which measures such characteristics as emotional stability, self-sufficiency, dominance, etc. Results of these tests, as analyzed by our own organization and the Department of Psychology at North Carolina State College, give definite strength to the belief that a driver who is in the upper 50 per cent of the scale on emotional stability, self-sufficiency, and dominance has twice as many accidents as the driver on the lower 50 per cent of the scale. This means that a safe driver is one who tends to be cautious, dependent, alert, somewhat tense, and not cocky and domineering in his relationship with other people.

Concerning the desired level of general intelligence, the test reveals there is substantially no difference in the upper 50 per cent and lower 50 per cent. On a check of preventable accidents per 5000 miles, the upper half produced 51 per cent of the accidents while the lower half produced 49 per cent. At this point we might indicate that the pre-employment test to determine general intelligence is administered only for the purpose of screening out those who do not possess average or normal intelligence and, at the same time, screen out those whose intelligence level is sufficiently high to indicate that they would not make good drivers.

After the specialized tests the driver is given a comprehensive eye examination, which measures accurately all of the several visual skills. This is followed by two personal interviews, one by the Operations Department and one by the Safety Department. Assuming that the applicant has passed all of these hurdles, he is then advised that he will be notified within about ten days as to whether or not he will be ac-

(TURN TO PAGE 118, PLEASE)

Model N 235 Truck and Bus Automatic Cancelling Directional Signal Switch

Arrow's New Automatic Cancelling Directional Signal Switch For Trucks and Buses

RUGGED

CAN'T BURN OUT

FULLY GUARANTEED

- Fits all trucks and buses; easily installed; extra heavy duty brackets.
- Switch cannot cancel out until wheel is turned a full 60° in opposite direction.
- Red pilot indicator and audible click. Switch can be manually cancelled.
- Cannot be burned out; protected by fuse in line.
- Modern styling, with baked enamel finish, attractive plastic handle—8⅝" overall length.
- Available for 6- and 12-volt systems and in the famous Magnalite signal kits.

GET A FREE ARROW CATALOG FROM YOUR JOBBER

See the complete line of Safety After Dark equipment Arrow offers you!

Flasher plugs in underside of switch; can be instantly replaced.

ARROW

SAFETY AFTER DARK

Arrow Safety Device Company
Mt. Holly, New Jersey

4 Star Safety Program

Continued from Page 117

cepted as a candidate for the Driver Training School.

During this ten-day period a very careful personnel investigation is conducted with regard to the following items: (1) police record; (2) driving record; (3) credit rating; (4) economic status; (5) social status, and (6) work history.

Again assuming these to be satisfactory, the driver is notified that he has been accepted as a candidate to the Driver Training School. He is warned at this point that the training school is a prerequisite to employment and that he must satisfactorily complete the training, in addition to which he must withstand a rigid physical examination and pass certain psychophysical tests.

Incentives

WHILE we are well aware of a great deal of controversy about the relative merits of various incentives and compensation plans for safe driving records, our experience has indicated that the driver himself places an unusual incentive value on the dollar. Hence, we have set up a safe driver bonus plan which is extremely simple in operation and is carefully explained to all driver personnel. It works like this:

1. No accidents during the first three months, 1 per cent bonus based upon the gross earnings for the three-month period.

2. No accidents during the first six months, 2 per cent bonus based upon the gross earnings during the second three-month period.

3. No accidents after nine months, 3 per cent bonus based upon the gross earnings for the third three-month period.

4. No accidents after one year, 4 per cent bonus based upon the gross earnings during the fourth three-month period.

The above outline indicates the bonus plan for the year 1952. We have not as yet decided whether or not this plan will be adopted for susequent years, but it appears at this time that this is the most satisfactory bonus arrangement we have used thus far. This plan assumes that each time a driver is involved in an accident his bonus situation will revert to the first quarter period.

Quarterly Contests

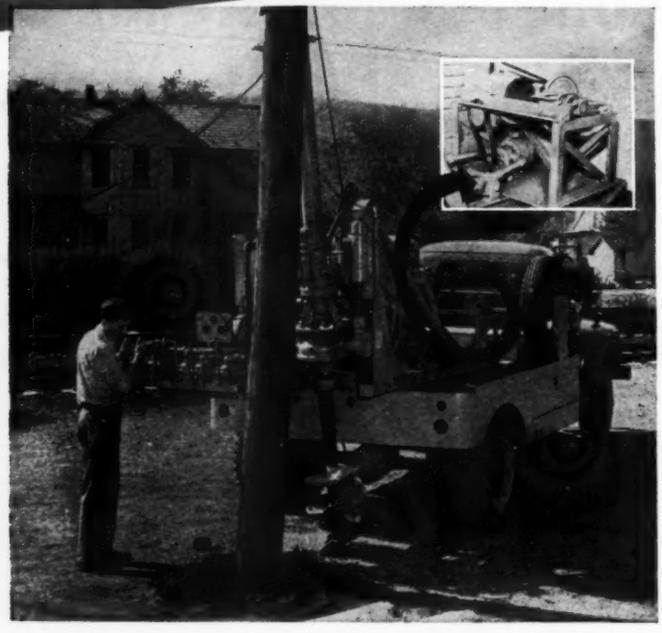
IN ADDITION to that, we have a definite contest plan which we vary from year to year. Readers may recall that two years ago Mr. McLean gained national publicity through the presentation of a completely furnished, $25,000 home to a driver selected by a drawing from our no-accident drivers. This plan was discontinued because it did not provide a bonus for those accident-free drivers whose names were not pulled from the ballot box.

Then during a subsequent year we used a merchandise award plan, wherein merchandise certificates were issued for varying periods of accident-free driving. Such coupons were redeemable at a local store in Winston-Salem for any class of merchandise, and the certificates were treated as cash money. Although this plan appeared to be successful, a controlled opinion survey with regard to this item conducted among our drivers indicated that they preferred to receive cash money, in order that they might be in a posiiton to spend it any place and for any purpose they so desired.

During 1953 we have set up four specific contests for operation in each of the four quarters of the year. A separate contest is conducted for local driv-

(TURN TO PAGE 120, PLEASE)

ONE MAN. . . AND A BRADEN WINCH

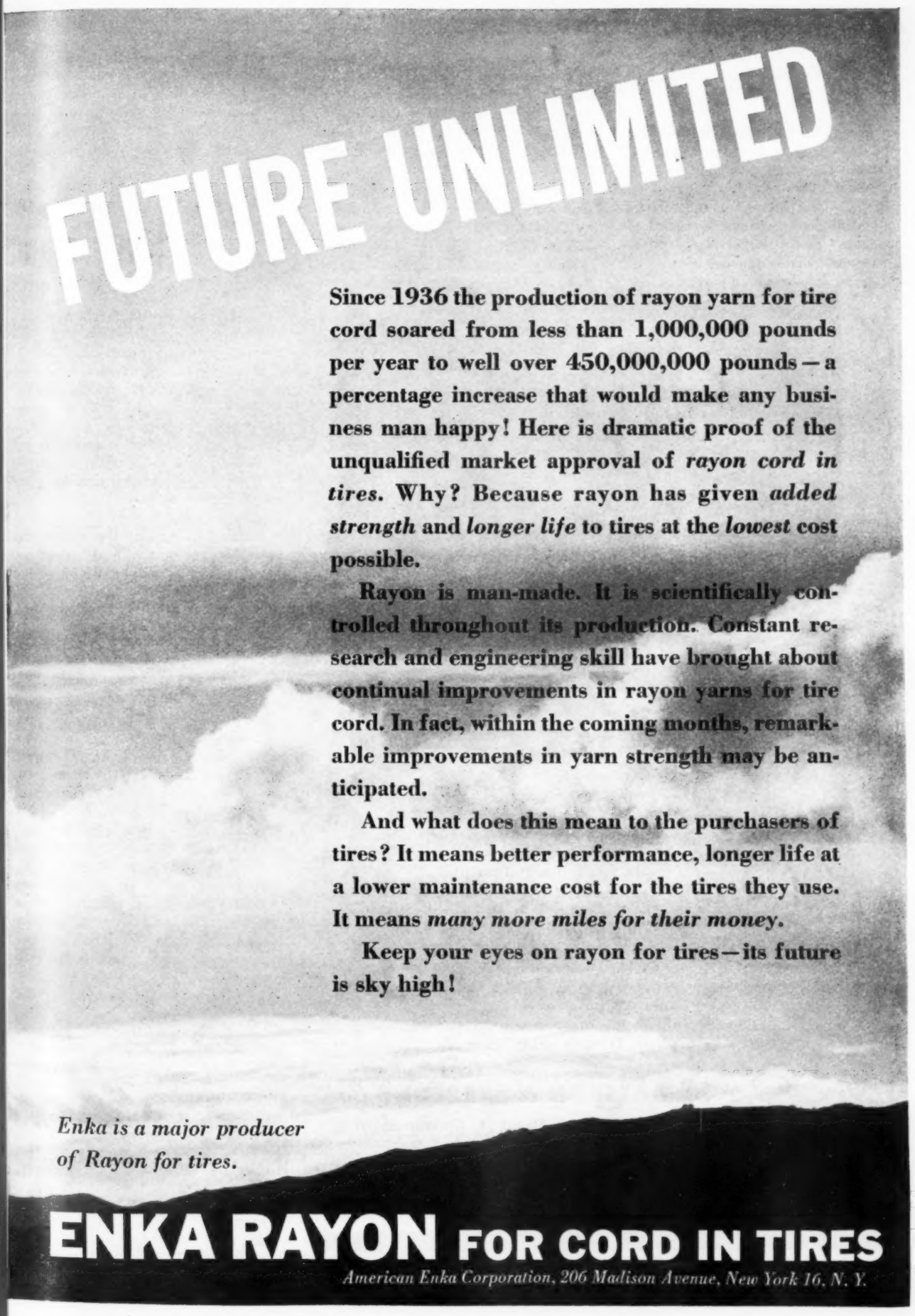


Pictured here is one man and a BRADEN WINCH doing an efficient job of pole setting. The controls are placed so that the operator can see the pole and keep the load under perfect control. This is another example of the adapting of a BRADEN WINCH to specific handling jobs. Let us know your handling problem and we will show you how a BRADEN WINCH can be used to solve it.

Write for complete information

BRADEN WINCH COMPANY
P. O. Box 547, Broken Arrow, Oklahoma

BRADEN Winches


FUTURE UNLIMITED
Since 1936 the production of rayon yarn for tire cord soared from less than 1,000,000 pounds per year to well over 450,000,000 pounds—a percentage increase that would make any business man happy! Here is dramatic proof of the unqualified market approval of *rayon cord in tires.* Why? Because rayon has given *added strength* and *longer life* to tires at the *lowest* cost possible.
Rayon is man-made. It is scientifically controlled throughout its production. Constant research and engineering skill have brought about continual improvements in rayon yarns for tire cord. In fact, within the coming months, remarkable improvements in yarn strength may be anticipated.
And what does this mean to the purchasers of tires? It means better performance, longer life at a lower maintenance cost for the tires they use. It means *many more miles for their money.*
Keep your eyes on rayon for tires—its future is sky high!
Enka is a major producer of Rayon for tires.
ENKA RAYON FOR CORD IN TIRES
American Enka Corporation, 206 Madison Avenue, New York 16, N. Y.

4 Star Safety Program

Continued from Page 118

ers throughout the system and one for road drivers. The first one completed on March 31 was an award for the neatest driver. This award was based on written ballots. These ballots could be completed by dispatchers, terminal managers, driver supervisors, safety supervisors, maintenance supervisors, and other persons not employed by our company. Each person could vote for any driver once on any given day, and he might vote every day if he so chose. But in order to vote the person must actually have seen the driver for whom he was voting and certify that he was voting in good faith. To be eligible, drivers must not have had a preventable accident during the contest period.

There were ten prizes awarded to road drivers and ten prizes awarded to local drivers. These prizes consisted of a $250 Savings Bond for each of the two first place winners and ranged down to a $25 Savings Bond for each of the contestants winning fifth to tenth prizes inclusive.

During the second quarter we had a similar contest for the most courteous driver. The prizes and the safe driving prerequisite were identical to the contest for the first quarter. Arrangements were generally similar but voting was limited to field safety supervisors, police officers, company employees (other than drivers), and the general public. In order to qualify for voting, however, three specific conditions were established: (a) a specific act must have been observed, (b) notice must indicate the date and location, (c) notice must indicate the driver's name or provide such information that the driver may be positively identified.

During the third quarter we are engaged in a no-accident contest. For this contest all privers are assigned to one of six driver groups. The group which has the least number of accidents will win the contest, and all drivers assigned to that group (provided they have had no chargeable accidents) will receive a $25 Savings Bond.

In the last quarter the contest will cover "Driver of the Year." Selection for this award will be based on the number of accidents, production and efficiency, care of equipment, fidelity to duty, customer relations, public relations, appearance, and employer relationship.

Judging will be based on data compiled throughout the year and will include narrative reports from operating, safety, and maintenance personnel, customers, and general public. There will be selected one local driver and one road driver to receive this award. Each of these drivers will receive a plaque naming him "Road Driver of the year" or "Local Driver of the Year," and each will receive a check for $500.

There has been no attempt made here to outline a complete accident prevention program but merely to reiterate some of the highlights of the accident prevention program which is presently in effect at McLean Trucking Company, which we feel might be of interest to the reader.

END

Please Resume Reading Page 68

Here's a handy assortment of Tapping Screws designed to meet every body shop requirement.

Twenty of the "most-used" sizes—1900 screws in all—always at your fingertips when you need them.

The sturdy partitioned steel cabinet is suitable for shop use or counter display. Your piece-by-piece sales profit is $16.00. Prices and sizes plainly marked on the lid.

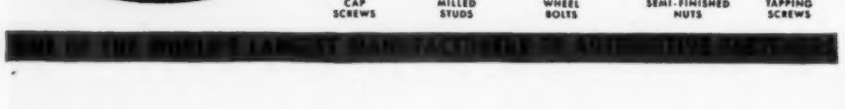
Ask your jobber for the Lamson "SM-2" Tapping Screw assortment. It's one of his "big sellers".

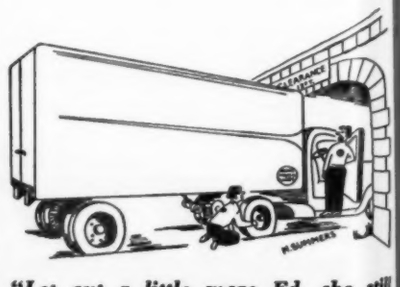
Lamson & Sessions

The LAMSON & SESSIONS Co.

1971 West 85th Street • Cleveland, Ohio

Plants at Cleveland and Kent, Ohio • Chicago • Birmingham

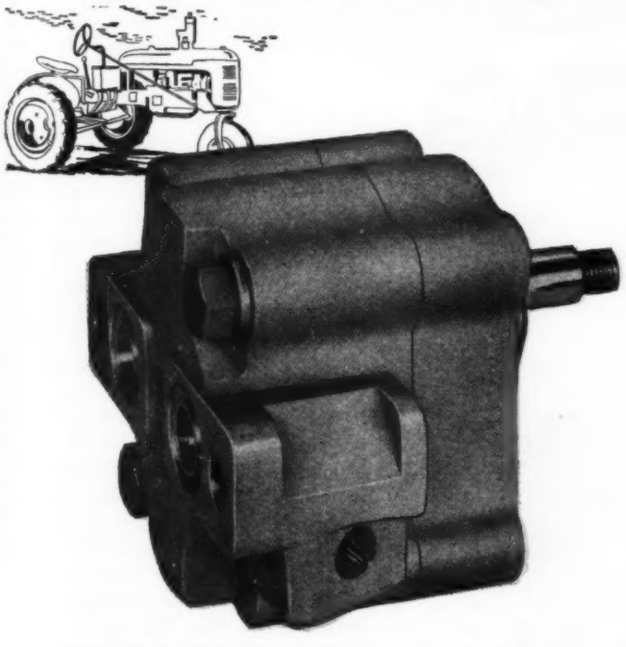




"Let out a little more Ed, she still touches!"

This Thompson power steering pump for use in automotive power steering systems, is an internal gear pump with a more uniform flow, better distribution of driving pressure, and improved operating efficiencies. Among other outstanding features of this Thompson-engineered pump are quiet operation, flat flow control characteristics, combination flow control and relief valve, and competitive manufacturing cost.

Pump performance you can take for granted



Thompson's hydraulic pump used to actuate tractor implements features pressure loaded end plates, which compensate for wear and results in longer service life. This farm implement pump has a high discharge pressure—1200 P.S.I.—and high volumetric and overall efficiencies.

WHETHER it's a farm implement pump or a power steering pump, you can depend on Thompson for precision engineered pump performance.

Techniques and skills gained in manufacturing complex items, many with the closest tolerances, are applied to Thompson pumps—assuring maximum performance and dependability.

In addition to these pumps to actuate your farm implements and for use in your power steering system, Thompson also manufactures industrial pumps. Our engineers will gladly work with you to design pumps for your specific application. Write, wire or phone, Special Products Division, Thompson Products, Inc., 2196 Clarkwood Road, Cleveland 3, Ohio.

You can count on

Thompson Products

SPECIAL PRODUCTS DIVISION

Everybody Knows the PM Score . . .

Continued from Page 86

Valve Troubles

ALL of our life expectancy tables are the result of our own surveys and checks and some of them have taken years. The survey of valve troubles occupied about three years before we came up with the 65,000-mile figure for replacement. Before we replaced them at that mileage we had considerable valve trouble and broken valves on the road can cost up to $500 depending on the amount of damage to block, cam shaft and other parts and the locality of the breakdown.

When our survey figures were boiled down we found we seldom had any valve failure under 75,000 miles and that regardless of make, the failures started at 75,000 and increased in tempo up to 200,000 miles. True, we had some valves that went 150,000 miles without any trouble but it was so infrequent that little dependence could be placed on them.

Consequently we set the replacement mileage at 65,000 so that if a tractor had to go over a trip or two it would still be within a safe bracket. When we replace valves on this basis we find that usually 75 per cent of them are badly burned and are on their last legs. Now a road failure on valves is almost unheard of and almost all of our valve troubles have disappeared.

However, we believe that our system of checking and adjusting tappets each 2000 miles helps make the replacement figure a safe one. In our survey we learned that the locality in which a tractor operates has much to do with the life expectancy of valves. For instance, our run from St. Louis to Chicago is through a comparatively flat country and there we found that our valves do very well for 100,000 miles. On our run from Springfield to St. Louis and points southwest and southeast the terrain is more hilly. In these areas valves start showing failure at 75,000 miles. We think the extra cycles of heating and cooling caused from going up nd down the hills is responsible for the shorter life and that valves last longer on a steady even pull through flat countries.

Engine Overhauls

OUR engines average 200,000 miles with one ring and three valve jobs before rebuilding. Our first ring job is scheduled around 125,000 miles and is done to coincide with the second 65,000-miles valve replacement.

After 200,000 miles we rebuild. The engine is completely dismantled and if a sleeved engine, the sleeve is rebored. We only rebore sleeves once and then return to standard with new sleeves. Sometimes we can work over our pistons on the first overhaul, recut the top groove and replace with an insert but if necessary we replace pistons. We use a chrome ring in the top groove.

Blocks are placed in a dip tank and soaked for 24 hours so that all sediment in the water passages will be loosened up. Our life expectancy gets shorter as the block grows older and we are convinced this is due to the fact that the block becomes more distorted as it becomes older, making it increasingly difficult to get a precision rebuild job.

Tire Routine

OUR tires are checked right along with the tractor and trailer service with replacements and changes made as needed and indicated by mileage records.

(TURN TO PAGE 124, PLEASE)

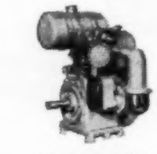
You Can Lift Cargoes UP or Keep Temperatures DOWN
Loading cargoes "for the road" — Wisconsin-powered Hyster Lift Truck, 2,000 lbs. cap., built by Hyster Co., Portland, Ore.
Power TO FIT THE JOB
Power TO FIT THE MACHINE
Keeping perishable cargoes while "on the road"—Wisconsin-powered Tru Kooler Unit, built by Tru Kooler Inc., Oelwein, Iowa.

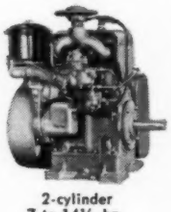
with WISCONSIN HEAVY-DUTY *Air-Cooled* ENGINES

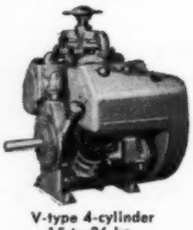
Part of the predominance of Wisconsin Engine power in all fields is due, of course, to fine construction features. But, there is something more. For example, you *can select* the *right size* Wisconsin Engine because of wide model range . . . single-cylinder, 2-cylinder or V-type 4-cylinder models, 3 to 36 hp.

And because the engine is *right*, it delivers best lugging power due to the best relationship of horsepower to torque. You get the best day-in and day-out power delivery. This advantage, coupled with thrust-absorbing tapered roller bearings at both ends of the crankshaft, fool-proof air-cooling and many other construction features found in every Wisconsin — gives you the *most* engine service with *least* engine wear and servicing.

Write today for helpful booklet titled, "Which Engine Should Power Your Equipment?"


Single-cylinder 3 to 9 hp.


2-cylinder 7 to 14½ hp.


V-type 4-cylinder 15 to 36 hp.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

Copper Fins Dissipate Heat to Air
Copper Layer Equalizes Heat
Alloy Steel Braking Surface
INSEPARABLY JOINED BY THE MOLTEN WELD

It's this HEAT-DISSIPATING design

THAT MAKES Copperweld® BRAKE DRUMS

Safer More Efficient More Economical

The Copperweld* Brake Drum is unique in that it employs a braking surface of special wear-resisting alloy steel to which is permanently molten welded a layer of copper with integral heat-radiating copper fins. The copper jacket almost instantly equalizes the heat and transfers it to the copper fins, which in turn dissipate it rapidly to the air. Thus, harmful heat checking and distortion of the drum are virtually eliminated.

This new principle of rapid heat dispersion makes possible greater safety, efficiency and economy in the operation of heavy-duty trucks and buses. For example, in a 3-year road test covering 30 million miles, Copperweld Brake Drums lasted more than 6 times as long as conventional types. They increased the life of brake linings used with them from 40,000 to 160,000 miles per lining. In addition, there was not one case of "fading" or "bell-mouthing" with Copperweld Drums.

For safer heavy-duty braking with substantial savings in maintenance and replacement costs, equip your fleet with Copperweld Brake Drums. It pays!

*Trade Mark

- Greater Safety Because of Cooler Temperatures
- Lower Maintenance Costs Because Fewer Replacements of Drums and Linings Are Required
- Uniform Braking Effect—No "Fading"
- Virtual Elimination of Harmful Heat Checking
- Less Wear on Linings and Drums
- Less Distortion
- No "Bell-Mouthing"
- Reduced Temperatures on Brake Parts, Wheel Bearings, Tire Beads, Lubricants and Running Gear
- Longer Service Life
- Greater Operating Economy

YOU GET ALL THESE ADVANTAGES with Copperweld® TRADE MARK

BRAKE DRUMS

Made By The Exclusive Copperweld MOLTEN-WELDING Process

For More Facts and Operating Data WRITE DEPT. C

BRAKE DRUM DIVISION · COPPERWELD STEEL COMPANY · Glassport, Pa.

OTHER DIVISIONS: WIRE AND CABLE, Glassport, Pa. · FLEXO WIRE, Oswego, N. Y.
ARISTOLOY STEEL, Warren, Ohio

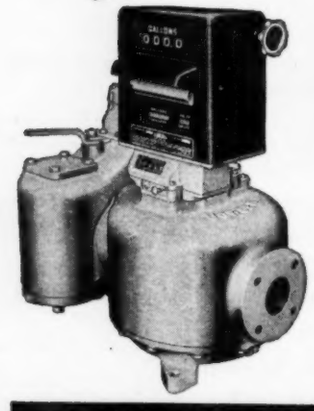
Copperweld Products Serving Many Industries
Dependably And Economically For Over *38 Years*

BOWSER
ESTABLISHED 1885

• FLEET FUELING SPECIALISTS

. . . WITH BOWSER FUELING SYSTEMS EVERY DROP OF FUEL IS RECORDED ON A PRINTED DELIVERY TICKET

• STOPS PILFERING
• SIMPLIFIES CONTROL



Bowser meter-printed receipts serve as accounting records for every fleet unit for payment and fuel consumption. Bowser equipment fuels at rates from 15 to 70 g.p.m. to speed operations. Many other models also available.

CLEAN, DRY DIESEL FUEL PROTECTS ENGINES

FILTERS . . . reduce engine wear. Clean fuel can't clog injectors. Reduce costs with less downtime and fewer overhauls.

DEHYDRATORS . . . improve combustion. Reduce carboning and corrosion. Increase operating efficiency. Minimize maintenance.

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DALLAS, TEXAS
2429 Commerce St.
KANSAS CITY, MO.
226 W. 39th St.
NEW YORK, N. Y.
420 Lexington Ave.
SAN FRANCISCO, CALIF.
468 Ninth St.
WASHINGTON, D. C.
Washington Bldg.
CANADA
Hamilton, Ontario

BOWSER, INC., 1361 CREIGHTON AVE., FORT WAYNE 2, INDIANA

Everybody Knows PM Score

Continued from Page 122

In the tire department we have had the heavy duty pneumatic tire and rim mounter developed by Autocar engineers. (Described on page 14, June, 1953, issue of CCJ.)

We added an improvement which eliminated the lifting and placing of the spider over the rim, by suspending the spider on a trolley supported on an I beam. Suspension is by a large coil spring which supports the weight of the spider as it is pushed in place over the tire and it takes but a small push to hook the spider to the floor pin.

In this system two brake cylinders are mounted in a small pit below the floor which provides the pull. We made our pit to the required 18 inches by welding two old rims together. This tire outfit reduces the work of breaking down these big tires to half and our suspension takes out all the lifting.

END

Please Resume Reading Page 89

Teletype in Buyers' Service

Continued from Page 102

load is being received at the unloading door of A. J. Freiman's. Here the staff will unpack and price the merchandise and it is placed on display ready for the opening hour of the store on the following morning.

Sounds simple, doesn't it? Well it is simple and one of those small services which have increased the company's business with this one company alone over 150 per cent. It has eliminated competition entirely with this company.

Buyers-Service does not cost the express company one cent extra. They use the Teletype machine to carry on their regular inter-office daily routine for which they pay a set amount monthly to the Bell Telephone Co. The personal purchasing is done by their supervisor, whose regular duties are to call upon the various customers anyhow, so this cost has not been increased.

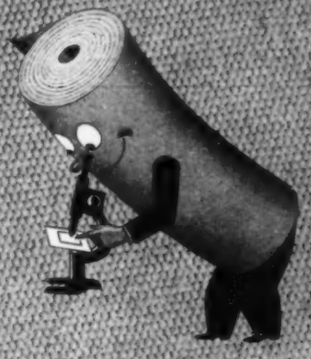
END

Please Resume Reading Page 104

Fabric UNIFORMITY
Makes The Big Difference
In TRUCK COVERS

MT. VERNON EXTRA

Gives You Greater Fabric Uniformity



Checking evenness of roving with Belger Tester.

One of a series of comprehensive laboratory controls throughout production to assure uniformity in all Mt. Vernon-Woodberry products.

Mt. Vernon-Woodberry Mills

Branch Offices: Chicago • Atlanta
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TURNER HALSEY COMPANY
Selling Agents
40 WORTH ST NEW YORK

It Pays To Control Dispatching

LEGAL CORNER

ABOUT seven o'clock in the morning, a man walked around a parked bus in Cleveland and into the path of a light delivery truck owned by a restaurant. The truck struck him, knocked him down, and ran over him. After he got out of the hospital, he sued.

The first things that came out at the trial was the fact that the truck was out without authority. The driver was a porter who had no business in the truck and had been told not to drive it. However, victims of truck accidents sue whatever name they see printed on the truck, and unless careful control is maintained over who drives and when, the owner may find himself stuck with the bill for damages, a poor safety record, and sometimes no insurance coverage.

The restaurant won their case. They were able to prove that the driver of the truck at the time of the accident had never been authorized to drive, that the morning of the accident he was on a trip for his own private purposes, and had in effect stolen the truck. The judge said that in order to hold an owner responsible for an accident involving one of his trucks, the truck must be out on company business, or out with the permission of the company.

If the porter had been picking up supplies with the truck, the company would have been responsible for the accident even though the porter had no business in the truck and had been told not to take it. The theory is that if the trip benefits the fleet in any way, it is responsible.

Company Business

JUDGES have always broadly interpreted "company business." If a truck is used to take employees on a picnic, it is company business; if a driver stops at his house when out on a trip, the rule is that he is on company business when he leaves the house and is heading toward his destination. On these side trips, the only time he is legally on his own is from the time he leaves the trip route until he gets to his house. As soon as he starts back, he is driving for the company again.

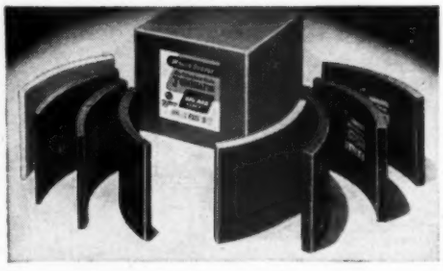
If somebody works late in the office and a company truck takes him home, even though not authorized to do so, it is company business and the fleet is responsible if there is an accident. The judges reason that it benefits the company to get employees home.

If fleet policy is to let drivers take trucks home at night, or to borrow them for any purpose, the fleet is responsible if there is an accident, no matter where or when.

The restaurant won its case because it had a consistent policy about use of trucks. They were able to prove to a

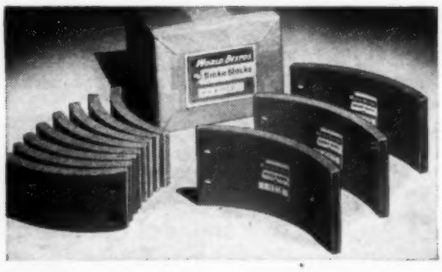
(TURN TO PAGE 128, PLEASE)

6 million miles of proof



World Bestos RED BLOCK with the famous "No-Fade" Guarantee

For extremely severe conditions. RED BLOCK in the "J" Combination is *guaranteed non-fading* (heat or water) . . . gives longer mileage and reduced drum wear. New *Wiper-Edge* now gives 10% more braking surface, keeps brake drums clean.



World Bestos Brake Blocks for Heavy-Duty Trucks, Trailers and Buses

Blocks ½" thickness and over, in three different frictions covering all normal heavy duty requirements. Combinations may be used to assure maximum stopping power and long wear. New *Wiper-Edge* now gives 10% more braking surface, keeps drums clean.

Pacific Supply Cooperative selects

WORLD BESTOS RED BLOCK

...because it surpasses ALL OTHER BRAKE BLOCKS for

GREATER SAFETY at LOWER OPERATING COST

PACIFIC SUPPLY COOPERATIVE
CHAS. BAKER, SECRETARY-MANAGER
HOME OFFICE - WALLA WALLA, WASHINGTON

P.O. BOX 1004, WALLA WALLA, WASHINGTON
Refer Replies to The Above

February 3, 1953

World Bestos, Inc.
New Castle, Indiana

Gentlemen:

We are operating 16 six-wheel tank truck and trailer units throughout the Northwest States of Washington, Oregon, Idaho, Montana, and Utah in the distribution of petroleum products to our retail Farmers Cooperative Units. To cover this large territory, we travel approximately 2,100,000 miles per year over all kinds of terrain in this Northwest.

This type of operation requires the best braking equipment obtainable which caused us to go through a period of testing several makes of the most popular brake blocks on the market. As a result of this test which ran for a period of two (2) years, we have settled on World Bestos and have equipped all of our units with your blocks. After three years, your lining has shown a very definite saving for our operation plus maximum safety from it's excellent friction and no-fade qualities.

Your name, World Bestos, is all it implies and we recommend it highly to all fleet owners.

Sincerely,

PACIFIC SUPPLY COOPERATIVE

Leonard Knowles

By: Leonard Knowles, Supt.
Transportation Dept.

LK/mp

● Performance *on the job* is the best proof of the service you can expect from the brake blocks you select for *your* fleet.

Pacific Supply Cooperative rolls more than 2 million miles a year over the mountains of five Northwestern states. World Bestos RED BLOCK, with the famous NO-FADE GUARANTEE, was chosen over all other heavy duty brake blocks for this extremely severe service. *The selection was made after 2 years of testing leading makes of heavy-duty blocks.*

Now, for three years . . . six million miles of service . . . RED BLOCK has provided *maximum safety* for the PSC fleet at a *definite saving* in operating cost. Experience is the strongest proof of RED BLOCK's superior performance. Many fleets, from coast to coast, report the same results wherever comparisons have been made.

CALL your World Bestos Distributor for complete information about RED BLOCK . . . or write direct to World Bestos, Heavy Duty Brake Division, New Castle, Indiana.

WORLD BESTOS
NEW CASTLE, INDIANA

Multiple-Draft Weighing

Continued from Page 94

ing errors as great as 3.2 per cent are possible when the approaches to scales are not of zero grade. Such things as brakes being applied while the vehicle is weighed seriously affect the obtaining of true weights. The more rigid the vehicle the greater the chance of error.

Experience shows that less rigid vehicles weighed by a single pair of loadometers under one side and then under the other side of the vehicle will just give you a lesser amount of error because of a lesser amount of torsional pressure delivered to the rear wheels of the semi-trailer resting on two scales.

In a specific case (See Box) weighing with two loadometers upset simple arithmetic. We know what the tandem tractor-trailer unit weighed empty. We knew the volume of the load of acid and therefore the weight of it. We added the weight figures and the gross was under the legal limit. Yet, the unit was seized by State Police, using two portable scales, because it was 7000 lb overweight, according to them. We showed the State Police our arithmetic so they agreed to an investigation. We found out not only what was wrong but we also learned that the error is less when four loadometers, are used instead of just two. The error in this case, with only two loadometers, was 10 per cent. With four loadometers, the error was within the one-half of 1 per cent tolerance.

Correct Equipment

THERE are states that are still improperly using temporary weighing devices such as the loadometer. Drivers are being convicted in courts today for being a very few pounds over the weight law and there is a serious doubt in my mind if they actually were overweight. In my own job, I have known many truck operators personally and I assure you, as they have assured me, that it was not their intention to overload.

We in the trucking industry, big and little operators alike, expect to be regulated. But, we feel we have the right to expect all the machinery used in this regulation, whether it be a law or an administrator, or even the weighing scales, be fair and be exact, and that procedures and practices be uniform.

END

Please Resume Reading Page 96

Neapco PTO Joints are made with solid forged steel yokes. Center assemblies use hardened steel plain bushings or needle roller bearings for long service.

All purpose rectangular drive shaft illustrated for most light duty farm applications. Other types of shafts and joints to fit trucks, graders, winches, etc.

Free Catalog PT-15B. Describes, illustrates, tabulates complete Neapco line of PTO Joints. Write today.

Dept. II, NEAPCO PRODUCTS, INC.
Pottstown, Pa.

NEAPCO TRADE MARK

by the makers of the famous Neapco Universal Joints

Legal Corner

Continued from Page 12

judge that no porter was ever allowed to drive and that they had fired porters for driving trucks, and they proved that the truck had no business being out when it was.

If a fleet is troubled with unauthorized use of vehicles, the dispatcher should post rules about the use of trucks, requiring that they be used only on official business, and on official trips and by authorized persons.

Many excellent trip ticket systems exist to control such a policy. If one of these systems is used consistently, the fleet should be able to get the case dismissed if sued because of an accident involving an unauthorized driver on a trip. The lawsuit would be against the driver personally as he was on his own when out in violation of the system.

Push-Button Us Hours . . . Comebacks"

—Bob Phelps, Phelps-Roberts Corp., Washington, D. C.

"Our mechanics like the Miracle Power and dgf push-button lubrication twins because they're so easy to use. I like it because improved pre-assembly lubrication means better break-ins, fewer come-backs," says Bob Phelps of Phelps-Roberts Corporation, Washington, D. C.

Yes, these Pres-A-Lubers are easy to use. Just press the button and out comes a fine spray of super lubricants—either dgf for dry pre-lubrication or Miracle Power for wet. Miracle Power and dgf are a blend of super lubricating agents including colloidal synthetic graphite in suspension. They cling to metal . . . provide effective "break-in" lubrication . . . prevent complaints and costly comebacks.

Miracle Power and dgf Pres-A-Lubers are a must for every mechanic's work bench. Use modern lubrication methods—order yours today from your Miracle Power wholesaler.

Miracle Power Division
THE AP PARTS CORPORATION
1136 AP Building • Toledo 1, Ohio
Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123

Fleet Training Courses

FLEET training courses have shown themselves to be a cost cutting way in obtaining the trained men needed in truck and bus fleet operation. Here is a list of such courses scheduled throughout the United States. Additional listings are welcome.

SEPTEMBER

14-18—Motor Fleet Supervisor Training Course, Institute of Public Safety, Pennsylvania State College, State College, Pa.

21-25—Motor Fleet Supervisor Training Course, Purdue University, Lafayette, Ind.

22-Jan. 26, 1954—Motor Carrier Operations, Transportation and Traffic Management Institute, School of Business, Northeastern Universtiy, Boston, Mass. (Tuesday evenings.)

24-May 27, 1954—Motor Carrier Accounting, Transportation and Traffic Management Institute, School of Business, Northeastern University, Boston, Mass. (Thursday evenings.)

28-Oct. 2—Course for Trainers of Commercial Drivers, University of Nebraska, Lincoln, Nebr.

28-Oct. 2—Preventative Maintenance Course for Fleets, Rutgers University, New Brunswick, N. J.

28-Oct. 2—Motor Fleet Supervisor Refresher Conference (tentative), University of Minnesota, Minneapolis, Minn.

OCTOBER

5- 7—Light Commercial Vehicle Fleet Operation and Management, Institute of Public Safety, Pennsylvania State College, State College, Pa.

12-16—Course for Trainers of Commercial Drivers, Institute of Public Safety, Pennsylvania State College, State College, Pa.

NOVEMBER

2- 6—Motor Fleet Supervisor Training Course, University of Illinois, Urbana, Ill.

2- 6—Course for Trainers of Commercial Drivers, University of Georgia, Athens, Ga.

9—Top Management Conference for Owners and Senior Executives of Motor Fleets, Institute of Public Safety, Pennsylvania State College, Philadelphia, Pa.

11—Top Management Conference for Owners and Senior Executives of Motor Fleets, Institute of Public Safety, Pennsylvania State College, Pittsburgh, Pa.

16-20—Motor Fleet Supervisor Training Course, University of Virginia, Charlottsville, Va.

Barge Lines . . . Now Private

Commerce Department recently sold its inland waterways barge lines, ending a long period of controversy and operating deficits. Federal Waterways Corp. bought the facilities for $9 million (just about cancelling out government operating losses). will offer service "substantially similar" to that under government ownership.

Rail Rates . . . Continue High

Railroads lost their battle to have current freight rates made permanent but did win from ICC the authorization to keep present rate levels, in effect since April, 1952, until at least the end of 1955. This concession also applies to freight forwarders and some water lines.

Consider an Engine Heater

Continued from Page 80

oil pan. Additional heat can be maintained in firing chamber by utilizing heat from engine exhaust through use of a heat exchanger.

Stationary Plants

THIRD major type of engine preheater, such as that made by Vapor Heating Corp., utilizes a stationary heater and electric motor driven pump to circulate heated coolant through vehicle engines by means of a pipe and hose system.

BTU output varies with the need of the specific installation. (One presently in use delivers 275,000 BTU per hr with a gasoline or diesel fuel consumption of 2¾ gal per hr.) The 1½ hp electric motor draws about 2.5 kwh current. The system is designed to keep the coolant temperature between 150 and 180 deg. The heater is turned off and on automatically to keep the coolant within this temperature range.

Easy on—easy off, self-sealing couplings on the hoses connect to similar couplings connected to the engine coolant system. When not connected to the engine, the hoses are connected together. The manufacturer recommends 10 buses or 20 trucks per stationary heater. With this arrangement additional heat is available for the bus interiors.

Money Saved

JUST what type and size heater you can use will depend on how much you can save by using one. In general, they will save you money through (1) decreased storage expense, (2) less maintenance cost and (3) reduced lost time.

Inside storage in a warm garage can eliminate cold starting problems and is generally considered as the best possible solution, but it is generally the most expensive. Actual figures comparing inside vehicle storage costs with outside storage and pre-heater use depend on local conditions. Storage facilities may be available in your area at very low rent, or construction costs may be very low. If they are, you are lucky. Rents, real estate and construction costs are genearlly high. This is the way it worked out for one bus fleet located in Toronto, Canada:

1. Inside storage costs came to about $510 per vehicle per year.
2. Periodic idling of engines to keep them warm cost about $270 per vehicle per year.
3. Outside parking lot pre-heater (one of the largest types available) costs came to about $199 per vehicle per year.

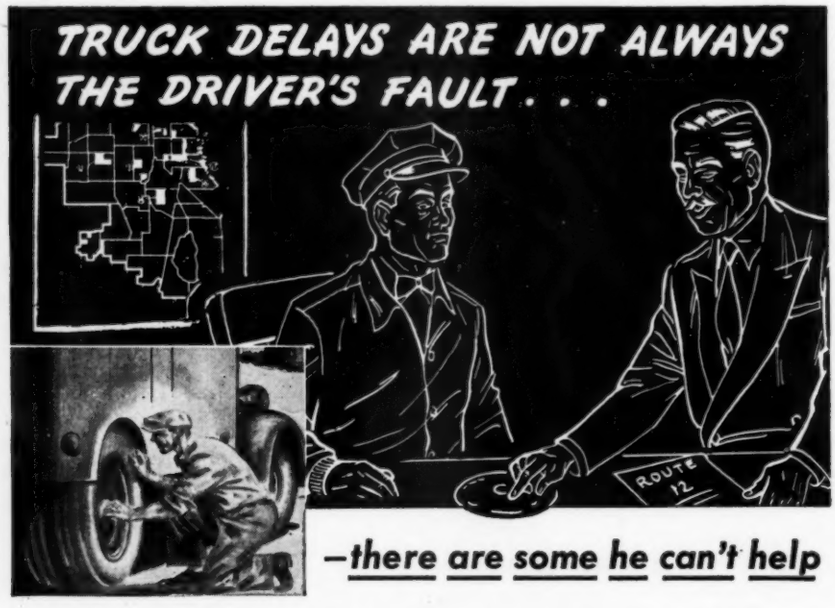
Another bus fleet, this one in Virginia, reported a saving of $347 per bus per year by using a parking lot pre-heater.

Maintenance

ON THE maintenance side, cold starting headaches do not always show up in dollars and cents, and, of course, cost figures would vary with the climate. But here are five cold starting problems that can be costly if not kept under control:

1. Uneven engine wear—All parts of the engine are not made of the same metal or alloy. In warming up, some expand faster than others. Running an engine while this expansion is going on means increased engine wear caused by the "poor fits" resulting from unequal expansion.

(TURN TO PAGE 134, PLEASE)



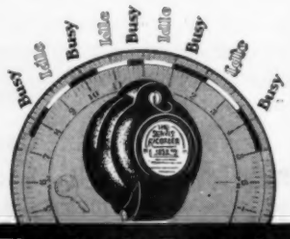
LOST TIME . . . DELAYS . . . GETTING IN LATE! Formerly the blame always was put on the driver ("Frank must've been loafing somewhere, etc.")

Some Other Causes

BUT—now we know that much of the time a truck loses can be due to the OFFICE! Take the Shipping Dept.—if it doesn't make the morning load ready *early,* the truck doesn't get away *promptly.* Take the Traffic Manager—if he doesn't route it efficiently, delays at traffic bottlenecks may result. But improve the office system and several expensive trucks increase their running time an hour a day or more!

Here's the Answer

Only when you find out *when* the delays occur and for *how long,* can you go after the *cause.* Install *Servis Recorders*—their charts show up *all* delays—idle time can't be hidden. Write for the full story. The Service Recorder Company, 1375 Euclid Avenue. Cleveland 15, O.



The Servis Recorder
The Good Driver's Best Friend

SPECIFY MIDLAND POWER BRAKES

WHEN YOU ORDER NEW HIGHWAY TRANSPORT EQUIPMENT

EVERY Midland Air or Vacuum Power Brake Kit is especially engineered for the truck, tractor, trailer or bus for which it was designed. Each unit and fitting is engineered for efficient operation and dependable stops. Each working part is tested to make sure that it is up to Midland's high standards of quality.

Leading manufacturers of highway transport equipment offer Midland Power Brakes as regular or optional equipment. Specify Midland and you can be confident that the power braking systems of your motor transport equipment will give long and trouble-free service.

SPECIFY MIDLAND ALSO WHEN REPLACING OR MODERNIZING POWER BRAKES ON YOUR PRESENT EQUIPMENT

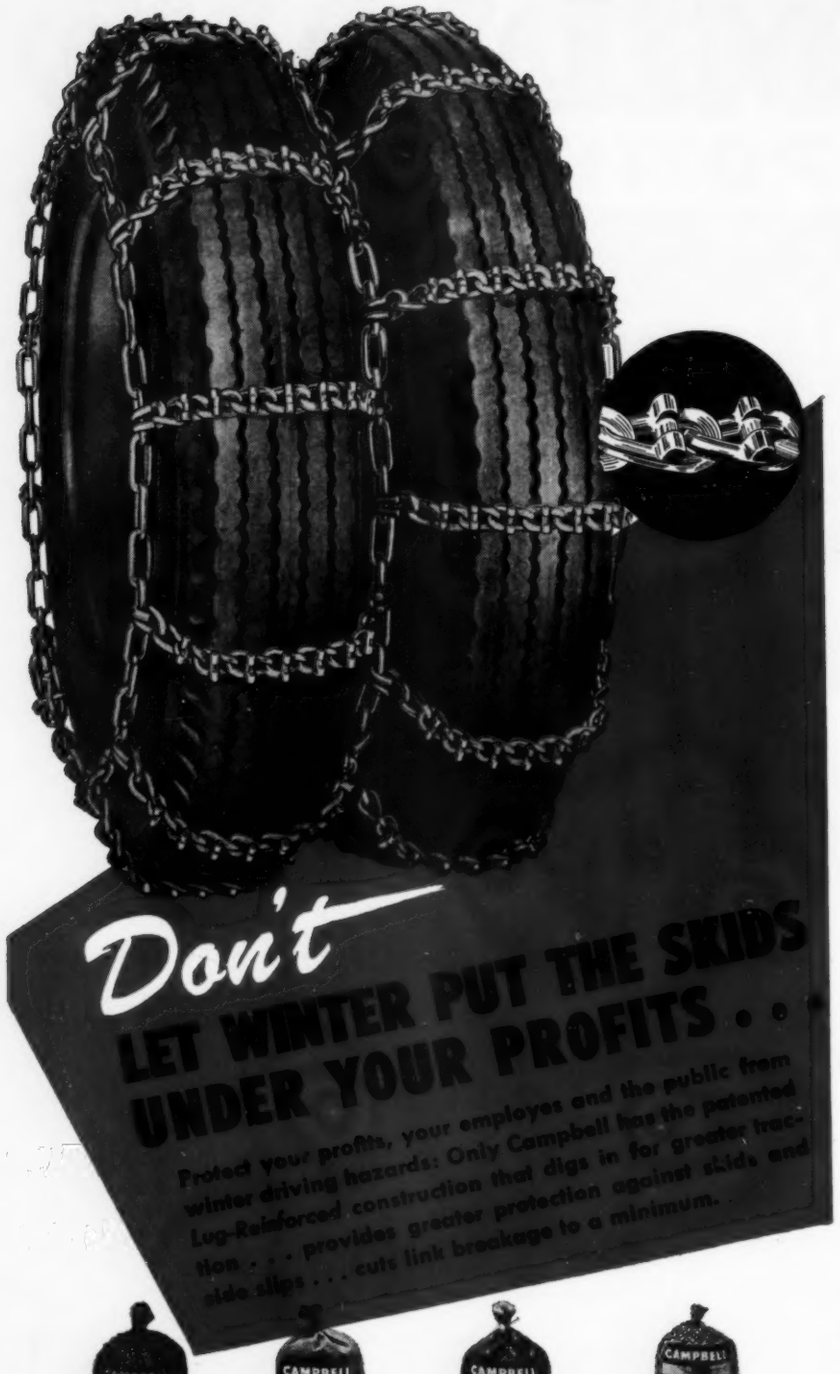
EXPERIENCED workmen at your Midland distributor's shop will install Midland Power Brakes on your vehicles. Or you can procure complete Midland Power Brake Kits from your distributor and install them in your own shop.

A Few Good Territories Still Open for DISTRIBUTORS
WRITE OR WIRE FOR DETAILS

THE MIDLAND STEEL PRODUCTS COMPANY
3641 E. MILWAUKEE AVE. DETROIT 11, MICH.
Export Department: 38 Pearl St., New York, N.Y.

These who know Power Brakes choose **MIDLAND**

GO MIDLAND — AND STOP SAFELY!


Don't
LET WINTER PUT THE SKIDS UNDER YOUR PROFITS . . .
Protect your profits, your employes and the public from winter driving hazards: Only Campbell has the patented Lug-Reinforced construction that digs in for greater traction . . . provides greater protection against skids and side slips . . . cuts link breakage to a minimum.
CAMPBELL
MUD SERVICE
CAMPBELL
CAMPBELL
CAMPBELL

Mud Service Single Pneumatic | Highway Service Dual Pneumatic | Lug-Reinforced Dual-Triple | Lug-Reinforced Interchangeable Cross Chains

Campbell passenger car chains are packaged in sturdy, metal edge boxes. Campbell Truck and Bus Chains are furnished in convenient color-coded bags to save handling time, make identification easy. Call your jobber, or write direct for complete information.

CAMPBELL CHAIN *Company*

MAIN OFFICE: YORK, PA.

West Burlington, Iowa; Portland, Oregon; Sacramento, Calif.

Chain for every need... industrial... farm... marine... automotive

Consider an Engine Heater

Continued from Page 133

2. Poor lubrication. Cold oil has a hard time reaching high enough in the cylinder to do a good lubricating job. It has difficulty reaching other equally important but more out-of-the-way places. Result of this condition is more engine wear.

3. Sludge, varnish and acid corrosion. Water condensation in a cold engine drops into crankcase oil, along with metal chips from 1 and 2 above. It is not long until sludge has ruined the lubricating qualities of the oil, deposited inself on cylinder walls, and in breaking down the oil, formed metal eating acids.

4. Ring coking. Cold piston rings are contracted tight around the piston. Unless they are warmed-up and expanded for a normal fit against the cylinder walls, combustion blow-by will produce coking on the rings.

5. Worn out batteries. Most batteries will not recharge under settings normally employed on voltage regulators until they are warmed-up to about 40 deg. A battery's discharge rate drops off as it gets colder, and many are not much good at below zero temperatures. At lower temperatures, batteries can be completely discharged as a result of only one attempt to start a cold engine.

Fleet operators using engine pre-heaters can look for time savings right from the beginning. Considerable driver, mechanic and vehicle time can be saved when the engine starts quickly with little trouble. Additional time—both vehicle and mechanic—is saved when you avoid the extra maintenance trouble resulting from the above five low temperature problems.

Index to Sources

The Five Star Mfg. Co., Grand Forks, N. D.

Fluid Heat Division, Anchor Post Products, Inc., Baltimore, Md.

Kim Hotstart Mfg. Co., Spokane, Wash.

Perfection Stove Co., Cleveland, Ohio

Phillips Mfg. Co., Inc., Minneapolis, Minn.

South Wind Division, Stewart-Warner Corp., Indianapolis, Ind.

Swingfire Division, Devenco, Inc., New York City

Vapor Heating Corp., Chicago

The Zaiger Corp., Lynn, Mass.

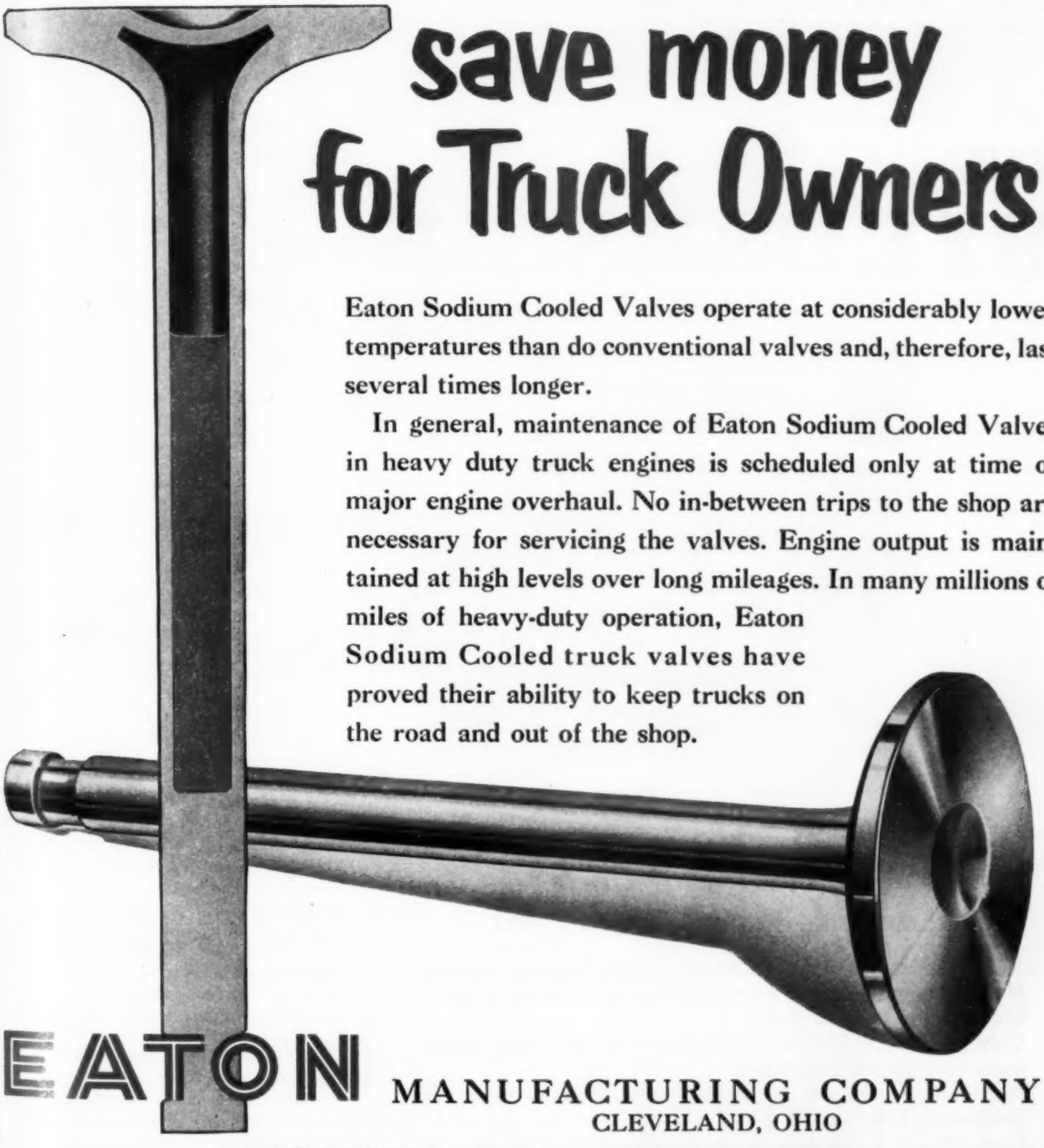
END

Please Resume Reading Page 81

TRAFFIC RATE CLERK: "WHAT HAPPENED TO THAT YOUNG OS&D CLERK WHO USED TO TAKE YOU OUT?"

CUTE BILLING CLERK: "HE TOOK ME IN."

Eaton SODIUM COOLED VALVES save money for Truck Owners



Eaton Sodium Cooled Valves operate at considerably lower temperatures than do conventional valves and, therefore, last several times longer.

In general, maintenance of Eaton Sodium Cooled Valves in heavy duty truck engines is scheduled only at time of major engine overhaul. No in-between trips to the shop are necessary for servicing the valves. Engine output is maintained at high levels over long mileages. In many millions of miles of heavy-duty operation, Eaton Sodium Cooled truck valves have proved their ability to keep trucks on the road and out of the shop.

EATON MANUFACTURING COMPANY
CLEVELAND, OHIO

VALVE DIVISION: 9771 FRENCH ROAD • DETROIT 13, MICHIGAN

PRODUCTS: Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

How Long Should Trucks Run?

Continued from Page 73

maintained at all time, the gasoline and oil cost per mile conceivably could be the same for a five-year-old truck as it is for a one-year-old truck. However, since this is not always the case, we have included gasoline and oil in our group of costs which vary with the age of the truck.

Garage servicing, hiking, washing. These costs in our books are inseparable from our other garage costs, so are thus included in the varying charges. It will be seen in further discussion that our results are not affected by loading a constant into both sides.

Garage overhead. At our company we consider garage overhead, such as supervision of mechanics, cost of operating stockroom, rags and so on a vehicle overhead. This is added proportionately to the labor and parts a vehicle consumes. Thus, a truck using a large amount of parts and labor is consider to use up a lot of supervisor's time and stockroom cost, while a vehicle that doesn't come into the shop is considered to use very little. Thus the older a truck gets, the more expensive it is both as to parts and labor and thus to supervision.

THE

BIEDERMAN

TRUCK

An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealerships solicited.

WRITE, WIRE or PHONE

BIEDERMAN MOTORS CORPORATION

CINCINNATI 14, OHIO

Cost Analysis

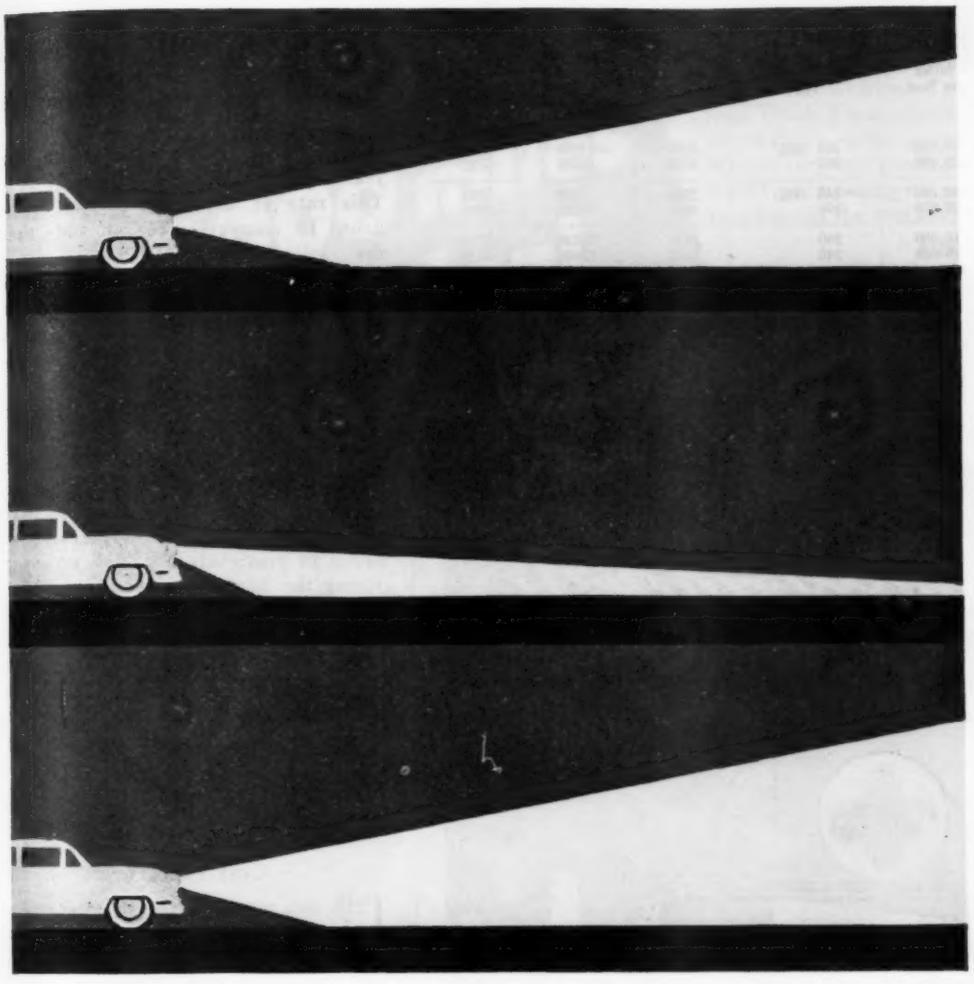
WE WILL now start to analyze some cost figures for a group of trucks to see what happens if we run them for varying lengths of time. The only costs we will consider are those we have assumed as varying with the age of the truck. We have used a ½-ton panel and a 1½-ton light duty truck as being representative of straight trucks and a medium and heavy unit as representative of tractor costs—four vehicles in all. We have selected popular makes where there has been some continuity of models during the past ten years. The National Used Car Market Report has been used as the source for representative prices.

In Fig. 1 we show comparative depreciation for vehicles of from 1 to 10 years of age in each of the weight classes chosen. It is apparent that the older the vehicles become, the smaller is the ratio between their average cash value at the present time and their factory price at the time of manufacture. These figures will serve as the basis for calculating the actual cash depreciation used in Fig. 3 for typical models in each weight class.

Determination of applicable operating costs is shown in Fig. 2. These costs include gasoline and oil, maintenance parts and labor, garage servicing, hiking and washing, tire repairs and garage overhead. For want of a better source, we have taken these from our own records. Two annual mileage figures are shown, 10,000 and 20,000 miles per year. The cost per mile under the 20,000 mile heading is less than that under the lower mileage, reflecting the normal increase in efficiency which is obtained when the truck spends a larger part of its time working instead of standing, waiting, stopping and starting as it does with the lower annual mileage. In both cases the year is considered as 52 forty-hour weeks.

Data from Tables 1 and 2 are used to set up the cost figures shown in Fig. 3. In determining the yearly depreciation expense, the same rate of depreciation per year was used for vehicles of all weight classes of the same age (i.e., two light trucks and the medium and heavy tractors were all depreciated

(TURN TO PAGE 138, PLEASE)

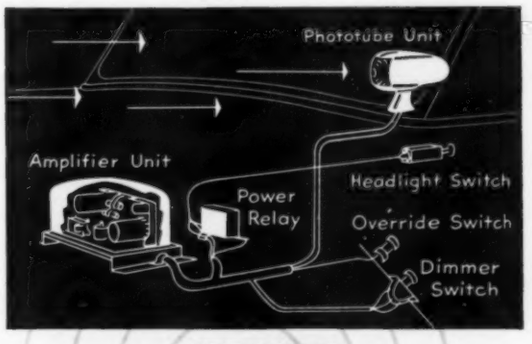


Automatically AT NIGHT!

Now car owners can drive after dark and really like it! Guide's new Autronic-Eye automatically takes over the entire job of headlight control . . . adds safety and convenience by ending "when-to-dim" guesswork.

The Autronic-Eye phototube unit on the instrument panel picks up approaching headlight beams . . . flashes an electronic command to an amplifier under the hood—and *lights dim automatically!* When all oncoming traffic has passed, *the Autronic-Eye brings headlights back to bright again—automatically!*

Ask your Cadillac, Oldsmobile, Pontiac or Chevrolet dealer for an Autronic-Eye demonstration . . . or write for complete information.

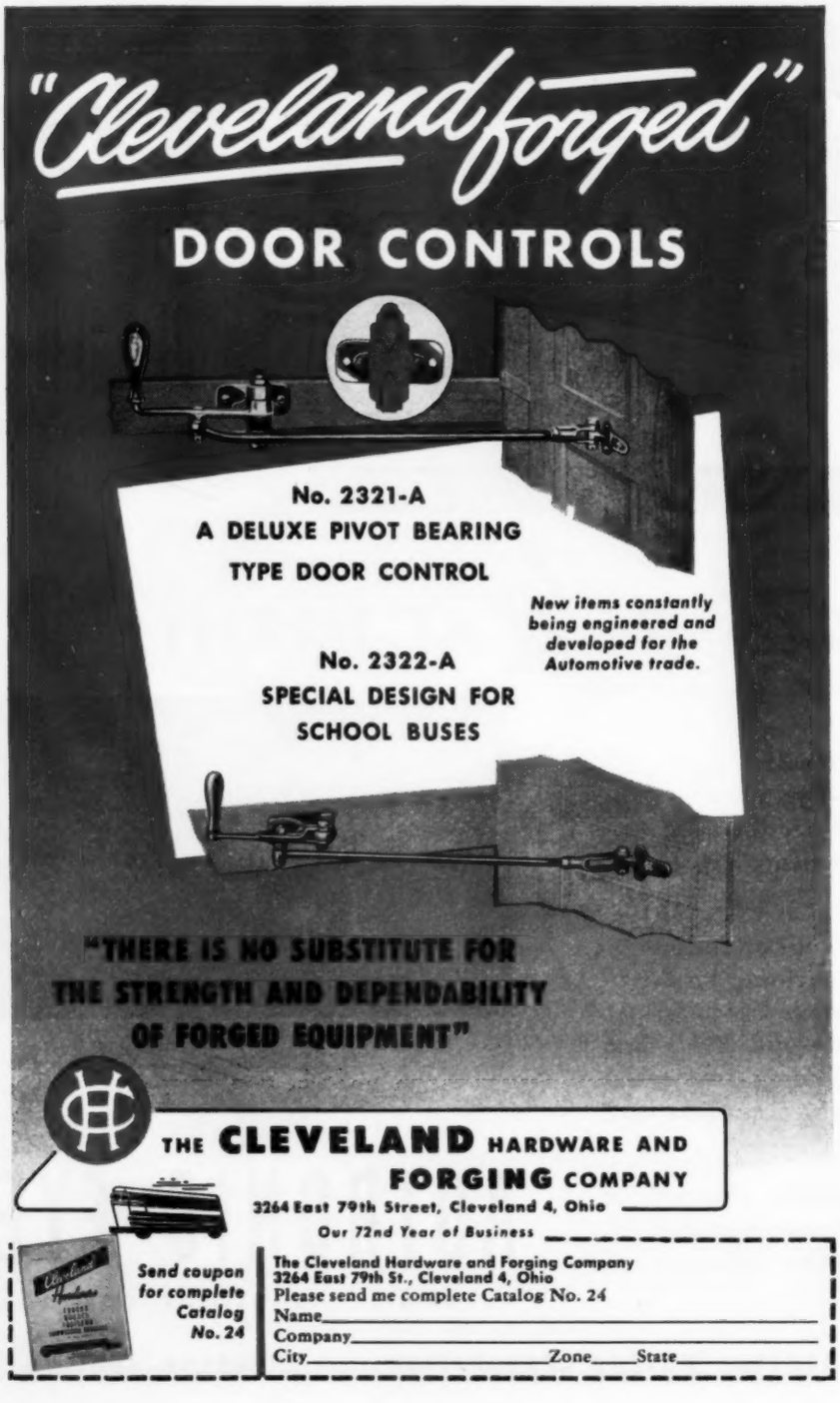


AUTRONIC-EYE®

AUTOMATIC HEADLIGHT CONTROL

GUIDE LAMP DIVISION • GENERAL MOTORS CORPORATION • ANDERSON, INDIANA

Years Operated	Miles per Year	Depreciation Expense During Year	Operating Expense During Year	Total Cost Since Purchase	Cost per Year
Heavy Tractor (Continued from page 73)					
5	10,000 20,000	360 (6%) 360	2650 3700	14160 18960	2832 3792
6	10,000 20,000	240 (4%) 240	2950 4000	17350 23200	2891 3866
7	10,000 20,000	240 240	2950 4000	20540 27440	2934 3920
8	10,000 20,000	120 (2%) 120	2950 4000	23610 31560	2951 3945
9	10,000 20,000	120 120	2950 4000	26680 35680	2972 3972
10	10,000 20,000	120 120	2950 4000	29750 39800	2975 3980


"Cleveland forged"
DOOR CONTROLS
No. 2321-A
A DELUXE PIVOT BEARING
TYPE DOOR CONTROL
New items constantly being engineered and developed for the Automotive trade.
No. 2322-A
SPECIAL DESIGN FOR
SCHOOL BUSES
"THERE IS NO SUBSTITUTE FOR
THE STRENGTH AND DEPENDABILITY
OF FORGED EQUIPMENT"
THE CLEVELAND HARDWARE AND
FORGING COMPANY
3264 East 79th Street, Cleveland 4, Ohio
Our 72nd Year of Business
Send coupon for complete Catalog No. 24
The Cleveland Hardware and Forging Company
3264 East 79th St., Cleveland 4, Ohio
Please send me complete Catalog No. 24
Name
Company
City Zone State

. . . Should Truck Run?

Continued from Page 136

at the rate of 40 per cent in the first year, 8 per cent in the second year, etc.) This rate of depreciation was established by comparing the amounts that the various vehicles were depreciated each year by the market as shown in Fig. 1, choosing the highest and lowest rates for each year then making an arbitrary selection of the market valuation and from that calculating the annual depreciation as evaluated by the market.

To the yearly cost of depreciation, we then add the yearly operating expense as determined for each model and year in Fig. 2. The sum of these is then added to previously accumulated costs during the life of the vehicle to show the total cost since purchase. From this the vehicle's cost per year is calculated.

Thus, Fig. 3 shows what happens, costwise, when we operate the trucks over a number of years. Our company records do not show what the operating costs are after six years, but we know they don't go down, therefore we have continued to use the six-year figure.

Cost Pattern

THE cost pattern of all these vehicles over the years is very interesting. The costs of the various sized vehicles, both at 10,000 and 20,000 miles per year, show, of course, that after an initial year of heavy depreciation, the cost continues downward for several years and then starts back up again as the weight of increasing maintenance begins to be felt. The remarkable thing is that there is so little difference between the cost of operating a truck for two years, three years, or ten years.

We are not going to tell you just what year you should pick to replace your vehicles. The conclusion we can reach, however, is that after the first year or two, it doesn't make much difference when we replace the vehicles from a cost of operations viewpoint. Thus it is possible for us to set up a replacement schedule and stick to it. The replacement schedule allows the maintenance superintendent to do a better job. He knows when the vehicle is going to come out of service and will not put in excessive repairs. The replacement schedule allows the purchasing department plenty of time to line up the selection and purchase of new equipment; it allows the operating department ample opportunity to request the proper units and with time, the purchase and sale of equipment can be done at an advantageous time.

END

Please Resume Reading Page 74

"100,000 miles on original tread!"

"We've gotten over 100,000 miles on the original tread of the Kelly-Springfield Truck Tracs, shown in this picture, on the drive wheels of one of our tractors. We are very well pleased with Kellys and would not hesitate to recommend them to others in the trucking business."

Dennis McNichol
Dennis Trucking Company, Philadelphia, Pa.

to roll on KELLYS!

PROVED AND IMPROVED FOR 59 YEARS

TRUC TRAC *Delivery*	TRUC TRAC *Highway*	COMMERCIAL *Heavy Tread*	DUAL TRAC *Special Service*	LUG TRAC *Special Service*

How to use a Bearing Puller . . . Better

Continued from Page 81

be hooked onto the gear hub as close to the shaft as possible, or behind the spokes, close to the hub, if it is a spoked or cut-out gear.

Bearing Cups

THE removal of bearing cups (bearing outer races) located in blind holes is not a difficult operation if the proper tools are available and they are used correctly. Whether the tools are screw-operated or hydraulically powered, the same general technique should be followed. Insert the bearing cup pulling attachment so the lips of the jaws engage the shoulder of the bearing cup, then tighten and spread the jaws behind the shoulder by turning the adjusting screw.

When the attachment is securely fixed behind the bearing cup, then the balance of the tool can be assembled in place and the actual pulling operation accomplished. It it's a screw-operated puller, the technique is the same and the entire assembly may be held in a vise—a hydraulically powered puller eliminates the torque generated with a screw-operated tool so no holding action is necessary.

There is a tendency on the part of some maintenance men to strike the end of the puller screw when a difficult pull is being attempted and the part refused to come off. This practice usually brings results, but more often will wreck the puller. When enough tension is obtained on the puller to complete the pull, in the operator's opinion, a few light, staccato raps on the head of the forcing screw will serve the purpose without the danger of damaging the puller.

The same effect can be obtained by sharply rapping the gear or part being pulled. The object being to set up enough vibration to break the part loose. This procedure can safely be used when operating hydraulic pullers as well, providing a heavy-handed operator who dotes on sledge hammers can be persuaded to lighten his touch.

Conceivably, a spike could be pulled from a heavy plank with a tack hammer if enough time and effort were used, but most people will agree that this would be poor practice. Likewise with pullers; to properly remove a gear, bearing or similar tightly fitted part, it is important to use a puller large enough for the job.

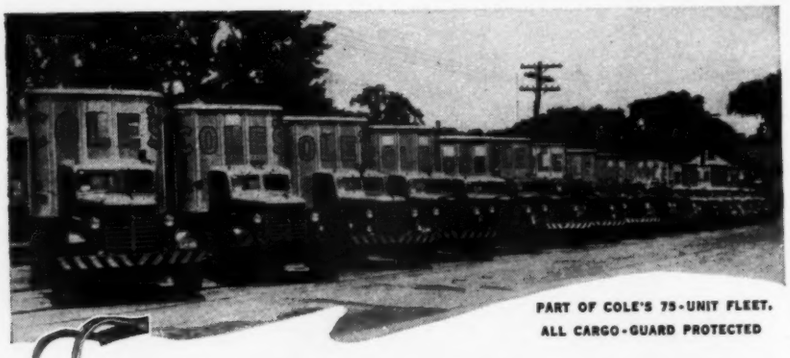
The size of the part to be pulled, generally speaking, dictates the size of the puller to be used. Obviously, a 6-in. pinion on a 2-in. shaft has an area of contact that would require a puller whose capacity is beyond a maximum 6-in. spread. In this case a puller rated at 15 tons and a maximum spread of 10 or 12-in. would more adequately fit the job. It is better practice to use too large a puller than one too small.

Hydraulic Pullers

HYDRAULIC pullers are designed to provide tremendous power with a disproportionate amount of effort and with a unit that is compact and light enough to be easily handled and readily portable.

The advantages of hydraulic power in this field are numerous and worth while. First, it increases the utility and scope of pullers already in use; secondly, difficult removal jobs requiring up to 50 tons pressure can be accomplished with

(TURN TO PAGE 144, PLEASE)



PART OF COLE'S 75-UNIT FLEET. ALL CARGO-GUARD PROTECTED

MAINE TRUCKER
protects perishables in standard freight box to 40 below

with CARGO-GUARD HEATER SAFE, LOW-COST AUTOMATIC LP-GAS HEAT

This fall, modernize your fleet! Install Cargo-Guard! Cole's Express, serving Maine, says:

"Light it—forget it. Cargo Guard's clean, steady heat protects the entire load, automatically, in New England's coldest corner. Labor savings alone more than pay for fuel. Maintenance is nil. It's safe under all kinds of punishment. We've tried 'em all—in 12 years we've found no other heater like Cargo-Guard "

CLIP COUPON!
Or phone, write or wire for immediate information.
Attention distributors and agents: Some good territories still open.

CARGO-GUARD Company
Thompson's Point - Portland 2, Maine

Please send information at once.
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(Company) .....
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(City) ..... (Zone) ..... (State) .....

Cargo-Guard Meets ALL ICC Requirements.

T5X CUTS OPERATING COSTS

If engine breakdowns are keeping your operating costs too high... then change to T5X motor oil. Heavy-duty T5X, the amazing *purple* motor oil, can boost your profits by guarding against costly engine breakdowns.

Even under the most *severe* conditions—dust, heat, rain and heavy loads—T5X gives superior engine protection. T5X protects rings, bearings and other moving parts against wear, and greatly extends overhaul periods.

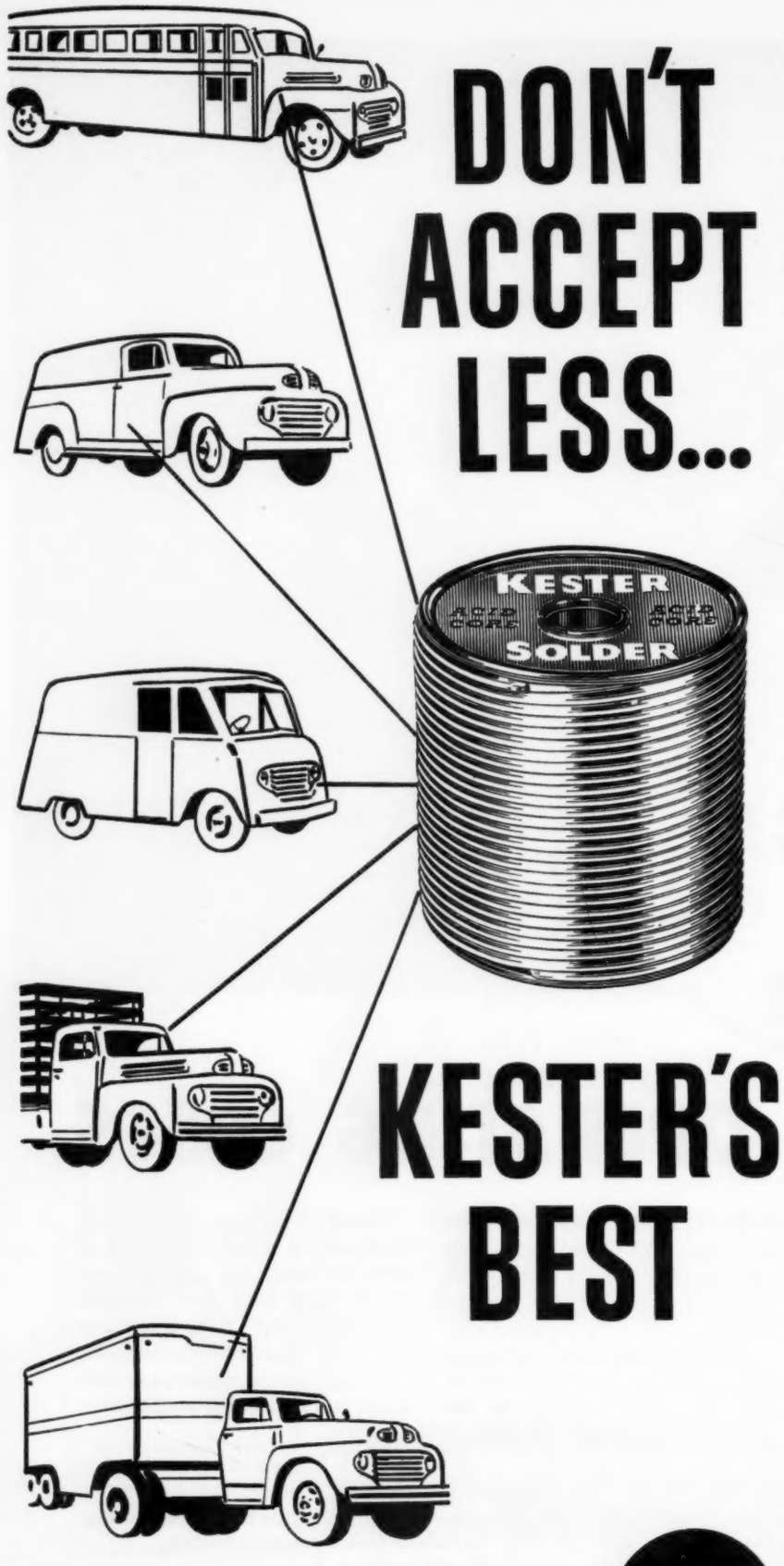
T5X protects against the clogging effects of sludge. And T5X keeps engines cleaner by retarding the formation of lacquers and varnish.

Test T5X on your *toughest* job. Compare the performance of T5X with the motor oil you now use. You'll agree with fleet operators everywhere that T5X lubrication means less wear, lower maintenance costs and greater engine protection under *every* operating condition.

OFFICES: LOS ANGELES: Union Oil Building • NEW YORK: 45 Rockefeller Plaza • CHICAGO: 1612 Bankers Building
CINCINNATI: 2111 Carew Tower Building • NEW ORLEANS: 644 National Bank of Commerce Building

UNION OIL 76 COMPANY OF CALIFORNIA

Makers of UNOBA—the original multi-purpose grease.



DON'T ACCEPT LESS...

KESTER'S BEST

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NEWARK 5, NEW JERSEY • BRANTFORD, CANADA

KESTER SOLDER

How to use a Bearing Puller

Continued from Page 142

ease and with a minimum of work. Third, where pulling or removal operations must be done on a scaffold, ladder, or in some insecure position, using a hydraulic hand pump at a safe 6-ft distance is quite obviously better than turning a screw with its attendant torque and hard work, plus a precarious perch several feet above ground.

The element of safety is of real importance to all employers and every precaution should be taken to guard the operator's person. In using a screw-operated puller the user must, of necessity, be close to the tool. Hydraulic pullers are equipped with a 6-ft hose so that the pump may be operated at a safe distance from the work.

On maintenance operations requiring less than 10 tons of power, screw operated pullers are adequate and require less time to set up. However, hydraulic pullers from 10 tons capacity and up offer many advantages which, when considered from all angles, recommend their use over screw operated pullers.

END

Please Resume Reading Page 82

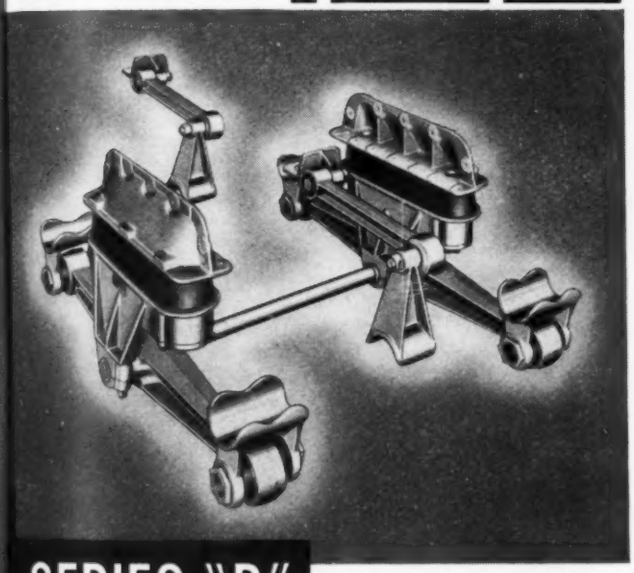
Rock Type Dump Body

Production of a new "rock" type dump body for extra heavy duty hauling of abrasive materials is announced by The Galion Allsteel Body Co., Galion, Ohio. Designed especially to withstand the hard shock of power shovel, chute and conveyor loading, the new unit is available in from 5 to 15 yd sizes. Body features extra wide box type side bracing, both horizontal and vertical, on the head sheet and sides. Side braces extend up under a 4 by 4 by ½ in. top roll for additional strength. Body sides fold into body floor at a 45 deg angle, reinforced with flat 45 deg steel plates at load-spaced outrigger type crossmembers. Body floor is also reinforced with a 2-in. hard wood liner inside the floor shell. Tailgate is eliminated by employment of a 15 deg angle scow type rear.

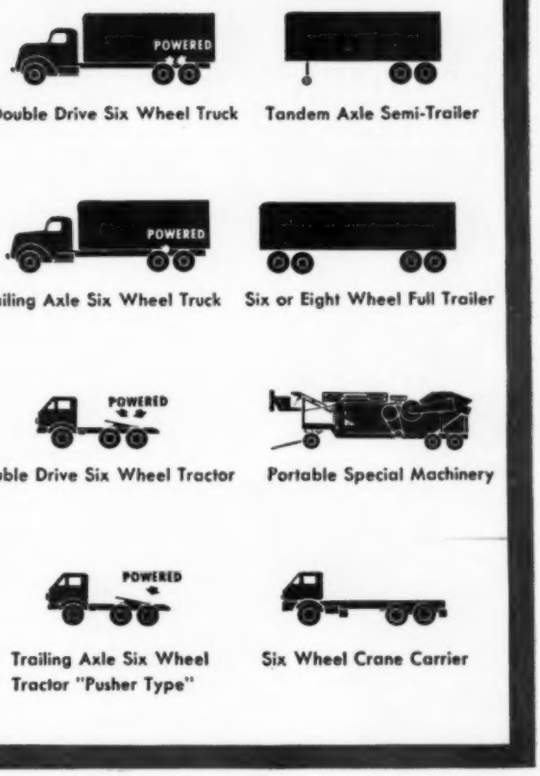
offers 3 series of tandems

SAME BASIC DESIGN!

now available in 3 different series.



SERIES "R" Featuring the Hendrickson *Load Cushion*



- Rubber Load Cushion (Progressive type)
- Rubber Beam Center Bushings
- Rubber Beam End Bushings
- Rubber Bushed Torque Rod Ball Studs
- Compression-centering Alignment
- Four Vertical Drive Pins

HENDRICKSON TANDEM

LYONS (CHICAGO SUBURB) ILLINOIS

Determining Unsafe Drivers

Continued from Page 70

A Word of Warning

FROM our previous studies we are well aware of the value of detailed medical control. The Profile system, as a part of this program, is an attempt to evaluate the overall physical and mental condition of the driver in respect to conditions that might be the cause of accidents—accident proneness.

A word of warning: the success of the Profile system of classification depends on the experience and understanding of the examining physician in assigning to his physical findings the numerical 1 to 4 ratings of the Profile. This requires real understanding of the job in question.

These Profiles also should be repeated with each periodic examination and the driver re-evaluated. This procedure would be similar to dynanometer testing of vehicles so corrective action may be taken before a road breakdown occurs. It is suggested that this system could well be adopted by bus and truck fleet operators in meeting the ICC Safety Regulation requirement that drivers be re-examined.

END

Please Resume Reading Page 71

Where on-the-nose Accuracy Counts
Truck Tire Life Depends on Accurate Inflation
The slightest error in inflation pressure can reduce fleet tire life as much as 15%—inaccurate gauges can rob you of one-out-of-six tires. And proper inflation reduces accident hazards, too.
There can be no question—you get on-the-nose accuracy when you use an Eco Tireflator. Simply set the dial to the required pressure (range 5 to 110 lbs.), and apply the chuck—tires are quickly and automatically brought to exact pressure.
Various models are available—all meet Grade A testing specifications of the American Standards Association.
AIR
JOHN WOOD COMPANY · BENNETT PUMP DIVISION · MUSKEGON, MICHIGAN
JOHN WOOD
QUALITY PRODUCTS SINCE 1857
Write for full information
JOHN WOOD COMPANY
BENNETT PUMP DIVISION
MUSKEGON, MICHIGAN

Dynamometer Tests

Continued from Page 71

The third step is to swing the engine into position, drop the front end onto a special cradle which spans the two front supports of the dynamometer stand, and attach the rear end to a universal plate (Fig. 3).

We cut this plate from standard ⅜ in. boiler plate stock, then cut a circular hole in the middle of sufficient size to clear the adaptor by a substantial margin. Mounting brackets were welded onto each side. Then we drilled a series of holes in this plate, using standard SAE 3, 2, 1, 0 and 00 flywheel housing dimensions, which would accommodate every type of engine normally serviced by us. With this plate so drilled, tightening down the rear end of the engine becomes a simple matter of running in capscrews in the appropriate series of holes. These capscrews are kept readily available in the tray on the dynamometer.

After this it is necessary only to make final connection to the dynamometer shaft and hook up water and exhaust lines before we are ready to roll.

As the pictures show, we use an electric-powered impact wrench for these dynamometer operations and other operations about the shop. Operations such as tightening down oil pans, accessory drive units, rocker housings, etc., are all performed by the impact wrench. We have found this to save substantially the total hours required for rebuilding and test-running a Cummins engine.

END

Please Resume Reading Page 72

Speed body refinishing with this new Black & Decker UTILITY No. 88 SANDER!

BODY AND FENDER refinishing is *fast, easy* and *costs less* —when you use the new B&D Utility No. 88 Sander! It's ideal for preparing surfaces for priming coats, and for sanding down the priming coat. It feather-edges beautifully—gets right up to moldings, door handles and other obstructions for a thorough job. The king-size sanding plate covers a full 40½ sq. in. at a time! It weighs only 8½ lbs., produces 5000 orbits per minute—is the most powerful of its kind on the market! Like all Black & Decker tools, it's quality-built with stamina for long life. For a free demonstration, see your regular B&D Utility outlet. Or write for free catalog to: THE BLACK & DECKER MFG. CO., 624 Pennsylvania Ave., Towson 4, Md.

KING-SIZE BOTTOM PLATE 4½" x 9" extends beyond body of tool for sanding up to molding, handles, etc.

MODERN SWITCH HANDLE is located close to housing for better control, less operator fatigue.

AUXILIARY KNOB HANDLE gives choice of three positions for sanding close to obstructions.

UNIQUE PAPER HOLDER stays open when attaching or detaching paper for easy changing.

Black & Decker

ELECTRIC UTILITY TOOLS

PORTABLE ELECTRIC TOOLS

SANDERS

DRILLS

POLISHERS

Who Should Own Your Sales Fleet?

Continued from Page 77

Vehicles may be replaced at a time when it is convenient to do so, and when it will least interfere with sales activity. This is particularly important to those companies whose business is of a seasonable or peak-activity type. The company may also take advantage of unusual opportunities in the used car market and make replacements when it is most profitable to do so. Due to an extremely good used-car market condition in New York, two years ago, one account was able to replace its fleet of one-year-old cars for a net cash outlay of only $40 per vehicle.

Many firms let salesmen use company-owned cars because they develop a certain amount of "pride of ownership" in the vehicle and will take better care of it. Most companies charge for this privilege and, in so doing, reduce their own operating costs. In some instances, the salesman is charged a flat per-mile rate and in other cases he pays a monthly or weekly charge.

In addition to the advantages of company ownership mentioned above, almost all of the disadvantages of the other systems which are mentioned in the following discussion will generally show as comparative advantages of company ownership.

Obviously, some effort is required to handle and maintain a company-owned fleet. Certainly the economies to be effected, which often range as high as $400 per year, per vehicle, would seem to warrant this effort on the part of management, particularly when safer, more efficient motor vehicle operation is assured.

Employee Ownership

SOME firms have adopted a policy of reimbursing salesmen for business use of personal cars. While this has the distinct advantage of purchasing transportation at an exact per mile cost, it is more expensive than company ownership. Some other advantages: it permits each employee to use a car of the make and model he prefers; it permits the employee to use the car for personal purposes without worrying about company rules or insurance matters.

To the employer, however, use of individually-owned cars for business purposes is, in effect, the same as leasing automotive transportation from its employees. This raises questions of employee-company relationships which can be harmful if not handled properly.

Seldom do the company and its employees agree on the amount of compensation that should be paid for the use of cars. Because the salesman must lay out a large sum of money as down payment on the car and must make regular and (compared with compensation paid by the company) large monthly payments to finance companies, the compensation will always appear relatively small. To the employer however, compared with the cost per mile of company-owned fleets, the compensation seems high.

It is, therefore, almost impossible to satisfy both the company and the employee. A plan which lowers per mile cost so as to approximate that of the company-owned fleet will satisfy management but will not be acceptable to salesmen. If the compensation is liberal enough to satisfy the employees, then the company is paying too much for its transportation.

One of the principal weaknesses of the employee ownership plan is that it

(TURN TO PAGE 152, PLEASE)

No. 185
DOUBLE FACE
No. 180
SINGLE FACE
No. 190
FLUSH MOUNTING
DIETZ
presents the new SLIM
DELUXE
CLASS "A" TYPE 1
DIRECTION SIGNALS
THE REGULAR MODEL
DIETZ CLASS "A" TYPE 1
DIRECTION SIGNALS
No. 186
DOUBLE FACE
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FLUSH MOUNTING
Lower price model featuring Stimsonite Lenses, single hollow stud mounting, snap ring lens retainer. Available with burn-out proof, self-cancelling or non-cancelling Switches.
Exceed latest S.A.E. Specifications—State Approved • Tested by Electrical Testing Laboratories, Inc. • Scientifically designed Stimsonite Lenses.
SLIM 2⅛" in depth
SLEEK No openings to let in water and dirt
STURDY Single hollow stud mounting—no excessive vibration
PRACTICAL Only one brass screw to service bulb or lens—round mounting.
SWITCH Burn-out proof, self-cancelling or non-cancelling
R. E. DIETZ COMPANY • 225 WILKINSON ST. • SYRACUSE 1, N. Y.
OVER A CENTURY OF LIGHTING DIETZ

The BIGGER they are...

the more you make . . . on a

VAN NORMAN

No. 111-EL Regrinder!

Extra-long crankshafts bring in extra profits . . . that's proved by shop-cost records. And that's why Van Norman builds three EL Regrinders for shafts up to 120″, 130″, and 145″ long (they'll handle the *smallest* shafts, too, of course).

These massive machines are easy to set up and operate . . . because of exclusive VN features like these: Set-up indicator for instant positioning check . . . offset heads that speed change over from mains to pins . . . crank-holding fixtures that allow grinding of mains and pins on centers . . . instant workhead control . . . and others.

See your jobber today about an EL for your work, and have him do your work for you in the meantime.

VAN NORMAN COMPANY
SPRINGFIELD 7, MASS., U.S.A.

GET IT FROM YOUR JOBBER

World's Most Complete Line of Crankshaft Regrinders

No. 460: For shafts up to 60″ long; 18″ swing.
No. 111: For shafts up to 84″ long; 24″ swing.
No. 111-EL: For shafts up to 120″, 130″ and 145″ long.

The Best-Equipped Shop Gets the Business! — that's why *"It Pays to Van Normanize"*

. . . Your Sales Fleet

Continued from Page 150

makes possession of an automobile a prime requisite for employment. Because of this, many companies have had to pass up salesmen well qualified for the job, but who did not own a car and were not in a position to buy one. Others have found that they have employed a poor salesman with a good automobile.

Much has been said and written of the rapid rise of highway accidents, and of ways and means by which action can be taken to help reduce them. Companies operating their own equipment can do something about this situation by instituting preventive maintenance programs which, at least, make the vehicle safe. Under the salesman ownership plan, however, there is little a company can do to make sure that the vehicles are always in safe condition. It can, of course, subscribe to accident prevention programs and safety campaigns but it cannot establish preventive maintenance practices or in any other way take over supervision of the automotive equipment.

Proponents of the employee ownership plan have certain stock arguments to justify the use of employee-owned cars for business purposes. Some of the claims warrant serious consideration. Many of the benefits usually claimed do not, however, hold up under close scrutiny. It is well, therefore, to examine these claims carefully. This we will attempt to do, taking each particular claim separately and analyzing it to see whether or not it will stand up.

Release of Capital. Companies using employee-owned cars frequently state that they do so because the company is relieved of investing a large amount of capital in automotive equipment.

While this is true, it is also worth noting that the company is merely transferring the capital expenditure to its employees. The cost is thus greater, since individual employees must finance the car through banks or finance companies and pay prevailing high rates of interest, whereas most corporations can borrow money at very low interest rates.

The salesman, too, must pay more for his car. He is a retail buyer and is not in a position to take advantage of special prices or other considerations available to fleet users.

These higher costs are seldom absorbed by the employees, who demand that compensation for the use of their vehicles be sufficiently high to meet the cost. Thus, the company which uses its employees' vehicles is paying a premium compared with the company which owns its fleet.

Relief From Administrative Detail. The claim that use of salesmen-owned cars relieves busy executives from burdensome details of administering the fleet might be valid except for one important factor. It is essential for salesmen to be kept on the road regardless of who owns the automotive equipment. If a salesman's car breaks down, the company will not have representation in its territory. If the salesman does not have the money to make the necessary repairs or to purchase a new car, the company must make some financial arrangement to enable him to get his car into operation. It is the responsibility of management to see that the car is kept in operation at all times and, even though the car is not the property of the company, it must on occasion spend considerable time and effort to make sure that a salesman is not neglecting his work because his car does not operate properly.

Economy of Operation. Some companies claim that employee ownership provides transportation for salesmen at an exact per mile cost and therefore is economical because the company pays only for business mileage.

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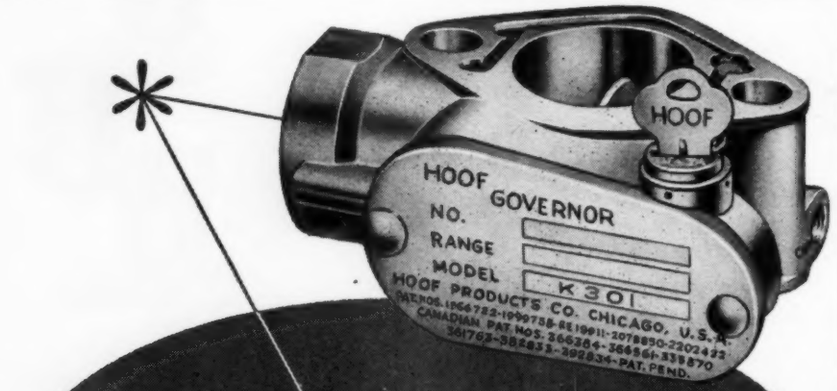


One engine overhaul costs more than a dozen

HOOF GOVERNORS

Today's costs are high! Trucks cost almost twice as much as in pre-war days. Replacement parts, labor costs, gas, oil — every phase of maintenance and operating costs has had repeated increases.

Hoof governors drastically reduce tire, fuel, brake, clutch, and other costs — as proven in hundreds of fleet records. They increase the interval between engine overhauls. Now, more than ever, these Hoof savings warrant your consideration. Write for facts, today!

No other Governor has Hoof's patented Cantilever Spring that means more accurate speed control, simplified construction and longer life.

NO OTHER SINGLE ITEM COSTS SO LITTLE and SAVES SO MUCH!

HOOF PRODUCTS CO. 6543 So. Laramie Ave., Chicago 38, Ill.

Mr. Henry Thomas runs an antique shop out in Clear Lake, Iowa. He knows all about those spoked wheels of *yesterday* at the top left, because it is part of his job . . . but *just* a part!

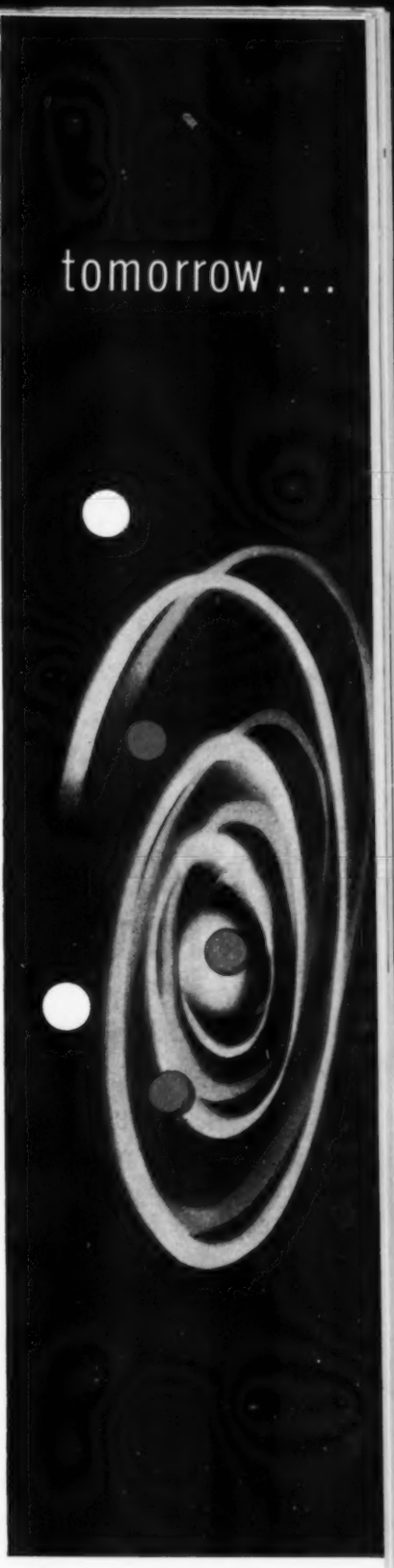
Mr. Thomas is also a Budd Wheel dealer and he knows that *today's* modern wheels, to transport the trucks of the nation with efficiency and economy, are Budd wide base wheels with a taper under both tire beads.

A while back, friends of his, the Kennedys of Kennedy Farms in Clear Lake, were having trouble with their wheels and tires on their fleet of trucks operating on and off the road in hauling crops through heavy peat soil where maximum flotation and traction are required.

Dean Snider of Des Moines Wheel & Rim Company was called in by Thomas, and he suggested a switch-over from obsolete 20 x 5:00 wheels to 20 x 6:50 Budd wide base wheels. Today Kennedy rolls on 84 of these wheels—and it has proved a sound investment, decreased tread wear and provided greater tire life . . . plus much greater maneuverability off the road.

"I found my purchase of Budd wheels an investment in savings!" says Kennedy. "My trucks are on the job and my tires hold up. What's more, my drivers like the way the trucks handle with wide base wheels that hang on and dig in, no matter what country we are rolling over. And yet they still run smoothly and easily on the highways!"

The Budd Company, Detroit 15



Budd

LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
LUBBOCK—Southwest Wheel, Inc.
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheels, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment Co.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.
WINSTON-SALEM—United-Automotive Service

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Mutual Supplies, Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—Auto Wheels & Supplies, Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

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There are no tricky ideas in MICHIANA Oil Filters—they are designed to do the one job of thoroughly absorbing a maximum amount of dirt, grit and other foreign particles to keep the lubricating oil clean. Clean oil is vital to engine efficiency.

Doing this job well means a big saving in oil consumption—it results in a drastic reduction of early and unnecessary wear, eliminating premature replacement or repair of parts.

Install *Michiana* Filters now,—Filters preferred and used by foremost engine builders and experienced operators of fleets . . . MICHIANA PRODUCTS CORPORATION, Michigan City, Indiana.

Request your copy of latest illustrated Bulletin 839 today.

MICHIANA OIL FILTERS

. . . Your Sales Fleet

Continued from Page 152

While the company pays only for business mileage, there is a "break" point at which the total annual cost for a salesman-owned vehicle equals the total annual cost of a company-owned vehicle. From that point on company ownership becomes more economical. That "break" point varies according to the plan of reimbursement used.

For example, cars operating 20,000 mile would cost only $900 for the same ance of six cents per mile would have an annual cost of $1,200. A company-owned car operating at 4½ cents per mile would cost only $900 for the same mileage, indicating that savings of $300 per year can be made under company ownership at this mileage.

Obviously any plan which obtains transportation for a company at a fixed per mile cost which, in almost all cases, is higher than can be obtained in some other way, can only be used effectively on those cars operating at low annual mileages.

The point at which the difference in cost between employee ownership and company ownership becomes so small that it is relatively unimportant, is approximately 12,000 miles. Any company, therefore, operating equipment in excess of 12,000 miles a year would do well to look to company ownership as a means of effecting large savings in the operation of its fleet.

Salesmen use cars of their own choosing. Some companies feel that having salesmen us their own cars does away with bickering between company and salesmen as to the make and type of car to be used on company business.

Rather than being an advantage, this represents one of the principal weaknesses of the salesman ownership plan.

All reimbursement plans are based on the assumption that salesmen will provide a reasonably current model car, and that it will be in good condition as to mechanical repair and appearance. Few companies, however, know exactly what type of vehicle is operated in their salesman-owned fleet, and whether or not they are receiving value for money paid to salesmen for the use of their cars.

It is safe to say that in almost any fleet of employee-owned cars there will be some of ancient vintage or in poor condition as to mechanical condition and appearance. Not only is mechanical condition important if the salesman is to cover his territory properly and efficiently—the age and appearance of a car are equally important from a prestige standpoint. A salesman calling

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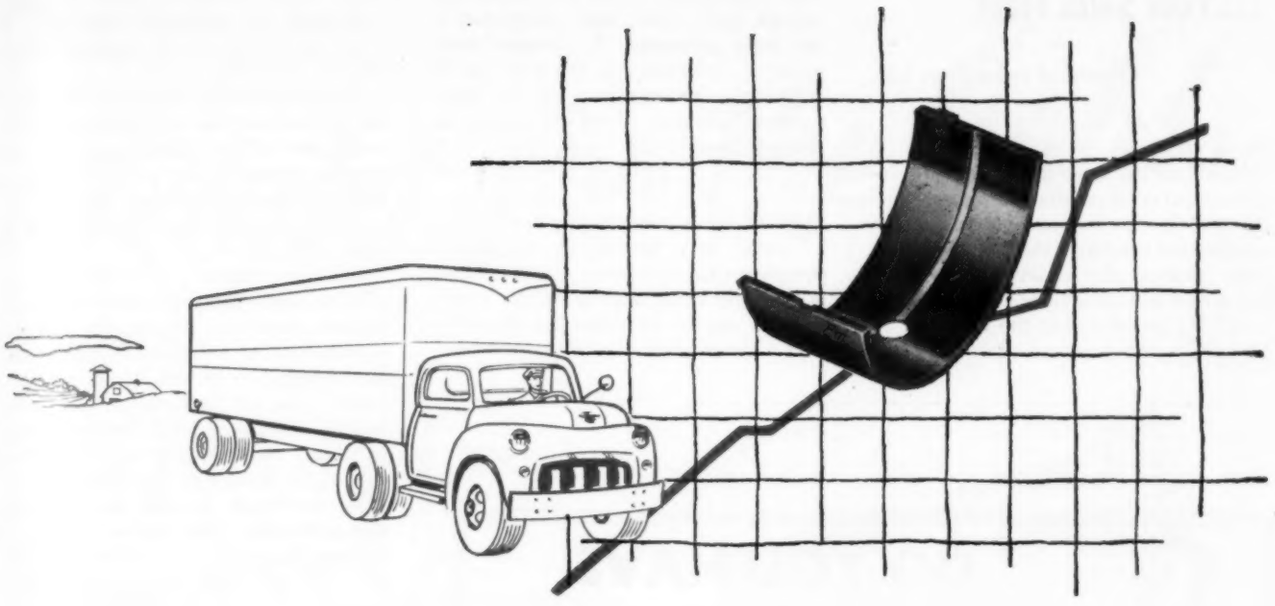
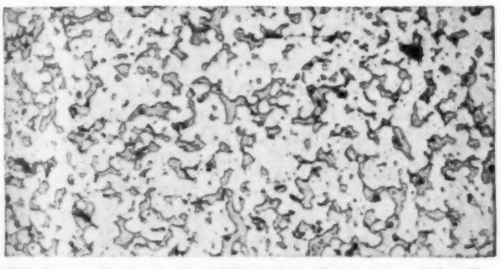
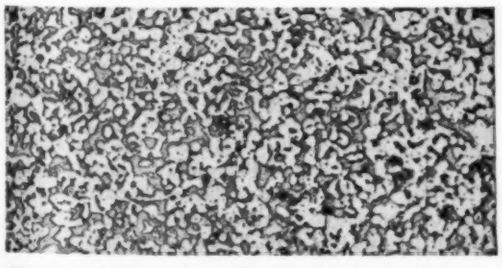


Photomicrographs — 50 time enlargements



CA sintered copper-lead bearings have scientifically controlled distribution of their higher lead content —just right for ordinary crankshafts. Available in precision standard sizes and undersizes, also in semi for resizing and align boring.



CP sintered copper-lead bearings have 24% lead. Because of the lower lead content, these bearings have even greater physical properties. CP bearings are lead-tin plated in the conventional manner (to assist break-in), and *then* protected against rust or corrosion with a coating of pure tin. Precision sizes—for precision installation.

FLEET OWNERS:

Use Federal-Mogul SINTERED Copper-Lead Bearings for Maximum Mileage in Heavy-Duty Service!

Only Federal-Mogul's patented copper-lead powder permits this strict control of alloys. To fleet owners, the even alloy distribution and good bond of Federal-Mogul copper-lead bearings mean maximum mileage. You can depend on them in high-speed, heavy-duty operation of your fleet engines. *Ask your Federal-Mogul jobber!*

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

BEARING FEDERAL Mogul SERVICE

Whatever your engine bearing needs may be, you'll find the best answer in the red-and-black Federal-Mogul package.

...Your Sales Fleet

Continued from Page 156

on a customer in an out-moded or dilapidated car does not make a favorable impression on that customer. Unfortunately, the reflection is frequently against the company and not the salesman because the customer does not know that the car is owned by the salesman. He assumes that the company is niggardly about spending money on motor equipment, while its competitors provide good, clean, safe transportation for their salesmen. A customer with pride of ownership in his own car is frequently contemptuous of the company or salesman whose car is kept in slovenly condition.

Leasing

ASIDE from using a salesman's personal car, leasing of automotive equipment on an annual contract basis is the only other way in which motor vehicles can be acquired for the sales staff without assuming company ownership. Since leasing is never a logical substitute for company ownership, it must be considered in relation to employee ownership.

Many companies using leasing plans do so because this arrangement eliminates most of the disadvantages of employee ownership, has many advantages and usually results in some savings, particularly on those cars being driven at high mileages.

Leasing provides a sales fleet without a large cash outlay by either salesmen or their employer. Because the contract is usually on an unlimited mileage basis, most companies permit salesmen to use leased cars for personal use, in some cases making a nominal charge for this privilege, thus helping to reduce the cost of the vehicle to the company.

As previously pointed out, a salesman-ownership plan makes possession of a car a requisite for employment with the company using it. Leasing eliminates this disadvantage, leaving the company free to choose its salesmen on merit alone.

With leasing, friction between company and salesmen over compensation for use of personal cars is also eliminated, because the company no longer uses its employees' cars.

A further advantage: leasing makes it possible for salesmen to drive new cars each year, with all the advantages new car operation provides.

Any company wishing to change its method of operation from employee ownership to company ownership should give serious consideration to having a leasing company effect this change. Under present conditions it would take a company operating any sizable number of cars approximately two to three years to switch from employee ownership to company ownership. During this period many problems can develop in the company's relationship with its sales staff in connection with the changeover. A good leasing organization can quickly supply a large number of cars so that the company can provide its sales personnel with transportation quickly and efficiently.

As far as the sales organization is concerned, the company will have stopped using salesmen's vehicles and will no longer be compensating them on a mileage allowance basis. The company will actually be providing transportation and it will be immaterial to the sales force whether the company owns the cars itself or leases them from an independent leasing company. Thus, once a company has eliminated the salesman-ownership plan by using leased cars, it can transfer to company ownership at any time without further disrupting its sales organization.

The evils of reciprocity have long plagued the management of many com-

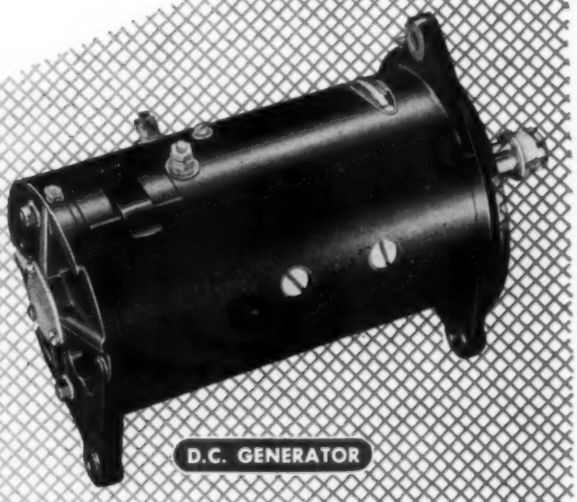
(TURN TO PAGE 160, PLEASE)

Years of research and experience have resulted in giving you all the answers to your heavy-duty braking problems. Mold-Blok is available in a friction range to give the best possible service for all jobs — old and new. You'll find Mold-Blok thoroughly dependable — proven best by test.

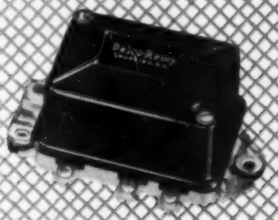
*Yes, northern pike bag just about as many wild ducks each year as hunters do — about 9 million.

MOLDED MATERIALS DIVISION
OF
CARLISLE CORPORATION
RIDGWAY, PA.

Right for the Job!



D.C. GENERATOR



REGULATOR

DELCO-REMY HEAVY-DUTY 5⅝" DIAMETER GENERATORS AND MATCHING REGULATORS

Delco-Remy heavy-duty 5⅝" diameter generators are favorites with users who need units that develop full output at relatively low engine speeds. These Delco-Remy generators have exceptionally long brush life (100,000 miles or more is common) and, because of their durable construction and simple, dependable lubrication system, require a minimum of maintenance.

Heavy-duty features include an extra-heavy, rigid armature shaft, extra-large brushes and commutator, ball bearings throughout, wick type lubrication with oilers, and forced ventilation.

These generators, with a frame diameter of 5⅝ inches, are available in 6-, 12-, 24- and 32-volt models. Six-volt models have capacities as high as 55 amperes, 12-volt models as high as 50 amperes. The 24- and 32-volt models provide outputs of 20 and 15 amperes respectively. Matching regulators are available for all models. Specify Delco-Remy heavy-duty generators with the necessary mounting brackets and pulleys on new vehicles.

DELCO-REMY

Division, General Motors Corporation
Anderson, Indiana

WHEREVER WHEELS TURN OR PROPELLERS SPIN

. . . Your Sales Fleet

Continued from Page 158

panies. A leasing arrangement is an excellent way to get rid of this nuisance. One large tire manufacturer, for example, sold its entire fleet to a rental company and took on a leasing contract merely to get away from continual pressure applied by automobile dealers to whom it was trying to sell tires.

These then, are the principal advantages of the leasing plan. That it has a definite place in the fleet picture few would deny. Certainly the wide acceptance which leasing has already enjoyed would indicate that it performs a valuable function for many business concerns.

Leasing has, however, created confusion and muddled thinking because of the unsubstantiated claims made by many of the newcomers to the field, most of whom were attracted in the hope of quick profits. It is probable that these newcomers have little or no understanding of fleet operations generally, and the sweeping claims they make are made through this lack of understanding rather than for purposes of wilful misrepresentation. Certainly, no leasing company can prove its contention that it is able to operate passenger cars at a lower cost per mile than those companies which operate their own fleets, particularly when those companies are using large fleets under a well-managed fleet program.

Many and varied are the passenger car leasing plans that have been offered to industry. All of them, however, have the same limited purpose in common—they are concerned only with supplying motor equipment, not with its actual operation. From this it can be seen that leasing is principally of value to industry in eliminating the administrative time involved in acquiring a fleet.

It is difficult, however, to see how leasing can effect economies in fleet operation, because as far as usage of each vehicle is concerned, nothing changes. Regardless of who owns the car, the salesmen cover the same territory in the same way, accumulating the same mileage and incurring the same expense. Actual operating expenses must thus remain the same except for the possible economies that good management can effect for the company-owned fleet.

If leasing is sold on the basis of reducing actual cost per mile, it should be attractive only to those companies operating at high mileages. The accompanying chart, page 77, indicates that a company paying six cents per mile compensation cannot save money by leasing until it operates its equipment at over 20,000 miles per year. A company operating its own fleet cannot obtain leased transportation at anywhere near the cost per mile of a well-managed fleet operation unless each car accumulates a mileage of close to 40,000 miles annually. Obviously any service purchased on a flat monthly basis becomes costly unless that service is utilized to its fullest possible extent. It will be seen from the chart that the cost per mile under the leasing arrangement is high at low mileages and that diminishes as mileages increase.

There are many variations of the leasing plan. Roughly, however, they divide themselves into two main categories—the leasing plan with maintenance and the plan without this provision.

Leasing with full maintenance is usually sold at a rate of $65 to $75 per month, depending on the number of vehicles involved. It generally provides for use of standard model Chevrolet, Ford or Plymouth two-door or four-door sedans equipped with heaters, seat covers, license plates, fire, theft and $50 deductible collision insurance, all mechanical repairs and maintenance, new tires when necessary, lubrication and

(TURN TO PAGE 162, PLEASE)

KEEPS
TIRES AIRTIGHT AT HIGH TEMPERATURES

HI-TEMP
Heat-Resisting
VALVE INSIDES AND CAPS BY
DILL

PREVENTS COSTLY ROAD DELAYS . . . CUTS TIRE WEAR AND EXPENSE . . .

Do you have tire pressure maintenance troubles caused by excessive tire heat? Equipping your tire valves with Dill HI-TEMPS will end this difficulty.

Under abnormal hot tire temperatures, even up to 300° F. and more, the heat-resisting air seals of Dill HI-TEMP valve insides and caps maintain airtight security, without sticking.

Tire engineers and fleet owners, everywhere, acclaim this modern Dill development. Dill HI-TEMPS will prevent costly road delays for you, cut tire wear and mileage expense. Buy this money-saving equipment from your wholesaler, tire or oil company, today.

THE DILL MANUFACTURING COMPANY
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No. 100-AH
Valve inside with special heat-resisting rubber seal in cup and on barrel.

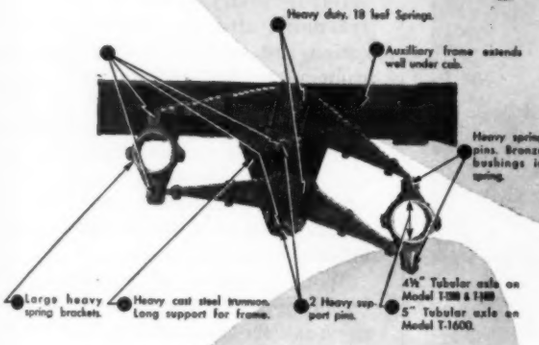
No. 632
Dome-type valve cap with swivel gasket of special heat-resisting rubber.

No. 631
Hexagon-type valve cap with lead gasket mounted over brass sleeve.

ORDER from your Wholesaler, tire or oil company.

DILL
TIRE VALVE EQUIPMENT
Standard of the Tire Industry

The GRICO *Super-flex*


Heavy duty, 18 leaf Springs.
Auxiliary frame extends well under cab.
Heavy spring pins. Bronze bushings in spring.
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4½" Tubular axle on Model T-1200 & T-1400
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The SIMPLICITY OF CONSTRUCTION and the effectiveness of operation make the Super Flex 3rd Axle TOPS in the trucking field from the standpoint of low cost maintenance and efficiency. The GRICO Super-Flex can be transferred easily from one vehicle to another as a truck wears out or becomes obsolete.

Your trucks may be doing a good job now, but watch your profits soar once you have equipped them with Super-Flex 3rd Axles. We say this because we have hundreds of letters from truck and fleet owners telling us that the GRICO Super-Flex has meant better and more economical service through . . . more maneuverability . . . greater fuel savings . . . better weight distribution . . . added payload . . . longer tire wear . . . increased safety . . . and low maintenance.

Your GRICO Super-Flex 3rd Axles are scientifically engineered and ruggedly built to give you long years of economical, trouble-free service. Just check the advantages of the Super-Flex and you'll agree that it's the only trailing axle for your trucks. Look to Grico for the advanced in engineering and feel confident that with the Grico Super-Flex you'll be on the road to higher profits with the finest unit of its kind in the world.

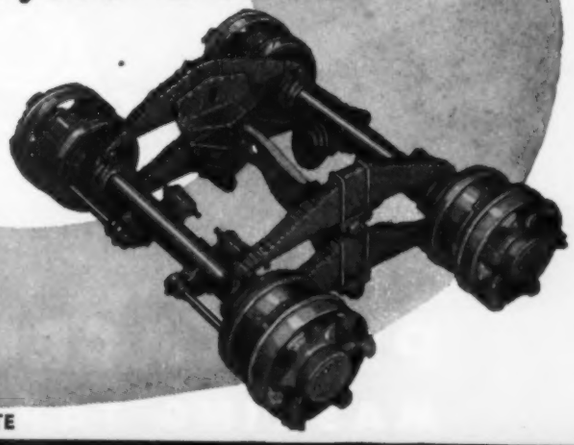
Easily Changed

If the nature of your trucking changes, Super-Flex can be transformed into a Grico 2-Axle Drive at a very nominal cost and a minimum of lost time.

GRICO *Dual Axle* UNIT

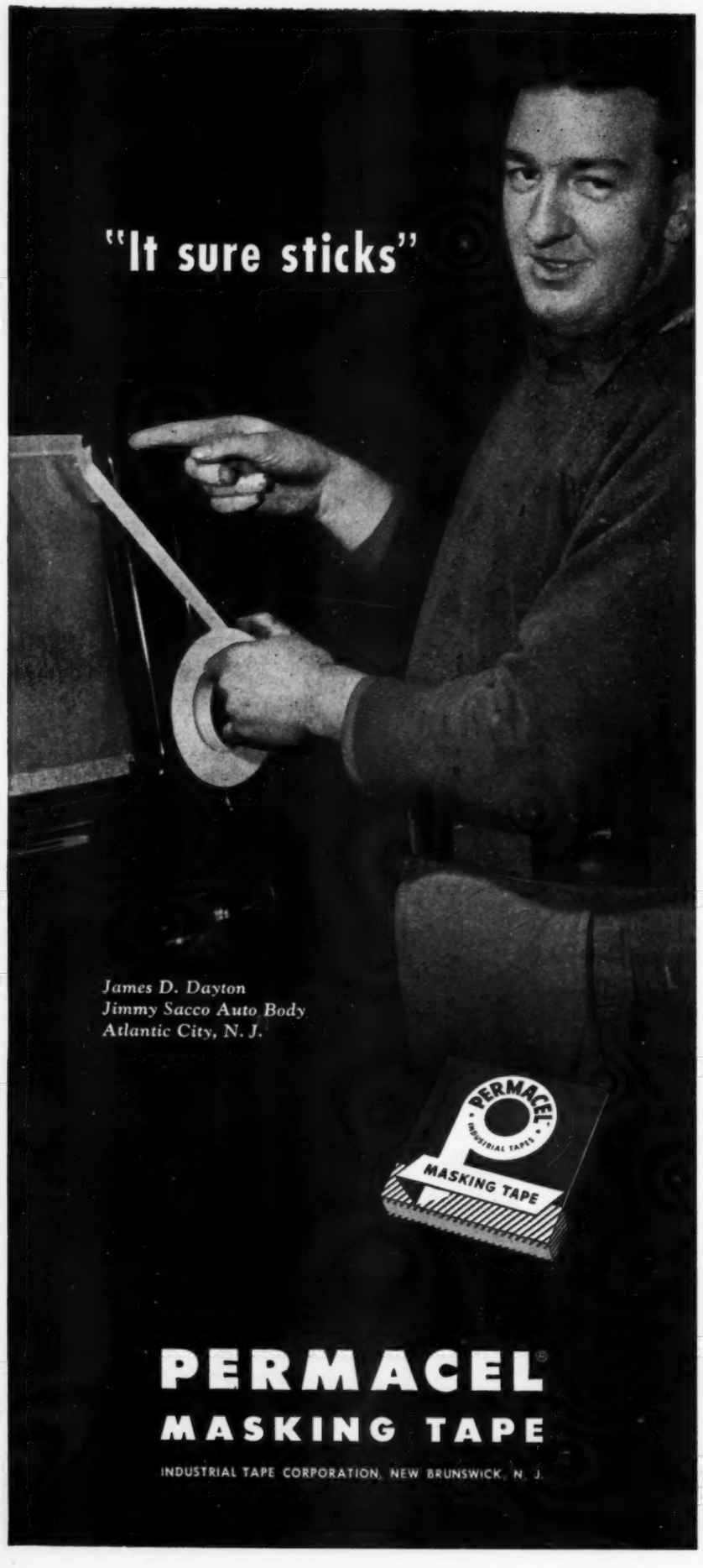
Convert your present single-axle trailer to a dual-axle job. Haul the maximum pay-load and cash in on advantages never before obtainable. LOW MAINTENANCE . . . LIGHT-WEIGHT CONSTRUCTION, YET DURABLE . . . LONGER TIRE WEAR . . . PERFECTLY CONTROLLED BRAKE TORQUE WHICH ELIMINATES CHATTERING. Yes, truly this Dual-Axle Unit will increase your profits and assure longer, more satisfying service.

Get your Dual-Axle by Grico now. It's easily and quickly done and will permit you to haul the maximum load with long trouble free operation.



FOR ADDITIONAL INFORMATION AND PRICES, WRITE

GRICO TWO AXLE DRIVE COMPANY 19840 W. EIGHT MILE ROAD DETROIT 19, MICHIGAN



. . . Your Sales Fleet

Continued from Page 160

oil charges, repairs caused by accident, and, in season and where necessary, anti-freeze and tire chains. In some instances, property damage and public liability insurance is included in the contract.

It should be pointed out, however, that this arrangement provides what is probably the most costly form of business fleet transportation, since the charges designed to assure the leasing company that it will not be penalized for cars driven at excessively high mileages.

Investigation will show that a contract which includes full maintenance does so at an added cost of from $120 to $180 per year. Most car owners would agree this is too much to pay for the first year's operation of a new vehicle. Twelve monthly lubrications and oil changes would amount to approximately $30 per year. Since the average yearly mileage of business cars is 20,000 miles, the purchase of new tires is rarely necessary so that the $90 or more remaining after the charges for lubrication and oil changes are paid is to compensate for repairs and maintenance alone. Few new cars are likely to require this much maintenance, particularly when the manufacturer's warranty covers necessary repairs of an unusual nature during either the first 90 days of a car's life, or the first 4000 miles of operation.

While providing all advantages of a leasing plan, a contract which omits provision for maintenance is much less costly. Under this arrangement a car can be leased for from $55 to $60 per month. This plan provides the same vehicles as the other plan, but includes only seat covers, heaters, license plates, fire, theft and $50 deductible collision insurance. Any expenses entailed in the operation of the vehicle are borne by the lessee, and he is responsible for maintaining the vehicle in good condition.

Since new cars are provided each year, minimum maintenance expense can be expected with little more required than periodic adjustments and check-ups. And, during a substantial part of the first year of operation, the vehicle is under warranty by the manufacturer. Money can thus be saved by leasing the equipment alone, and paying for maintenance as it becomes necessary. If some degree of good fleet management is practiced, the savings can be considerable.

In view of the apparently wide acceptance of claims made by adherents

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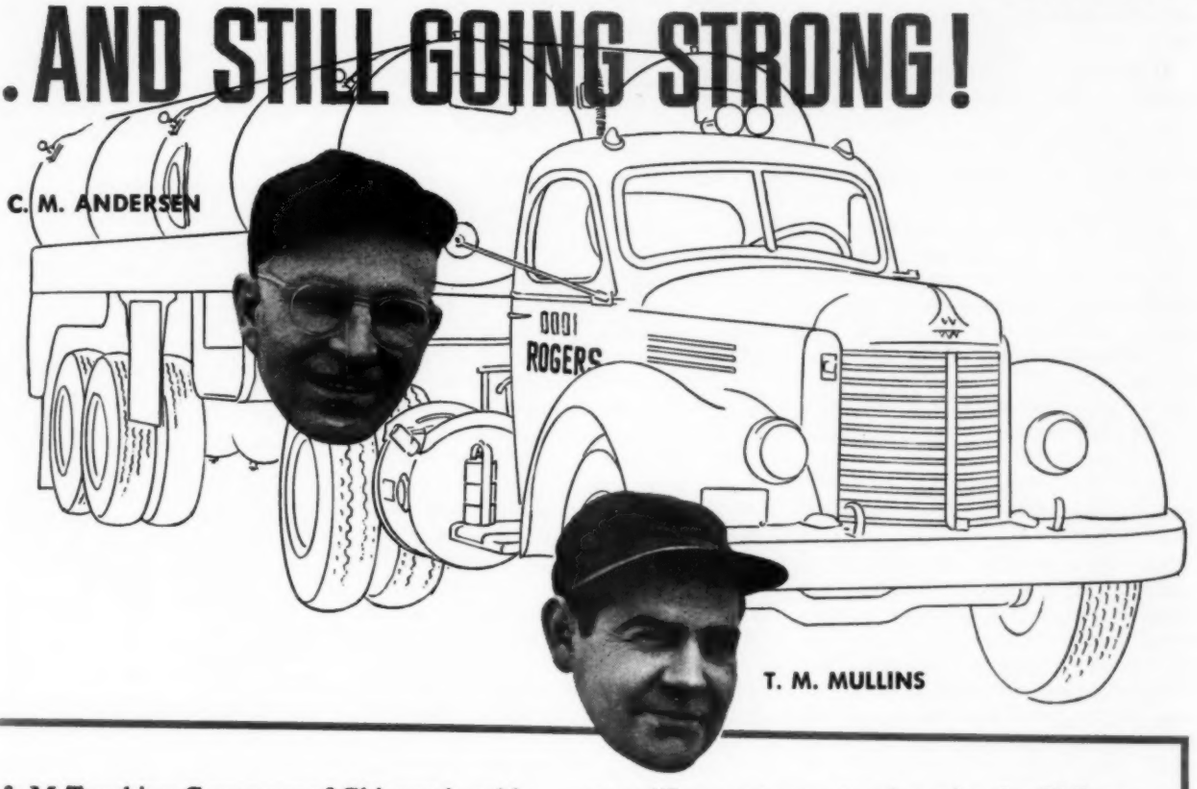
300,000 MILES WITHOUT OVERHAUL ...AND STILL GOING STRONG!



A & M Trucking Company of Chicago is sold on Philgas*. One reason is the International shown above. Powered by Philgas, it has traveled 300,000 tough miles—and has never had the head off.

Christian Andersen and Thomas Mullins, who subcontract for Rogers Cartage Company, started with Philgas in 1947. Today, they have six International Trucks and two 3000 series Whites using Philgas. They did the converting in their own shop. Tom Mullins says: "I can set up a truck engine for Philgas over a week end."

Both men are quick to point out the advantages of Philgas as shown by their experience. "Philgas cuts costs all the way down the line. It gives us triple the miles before overhaul and more power than either gasoline or diesel."

Put Philgas to work for you. You'll find it is the ideal fuel for truck operation. It will give you added power while cutting your operating expense. Write for complete details.

Phillips 66 Philgas
THE ALL-PURPOSE FUEL

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CHICAGO, ILL.—*7 South Dearborn*
DENVER, COLO.—*2185 Broadway*
DES MOINES, IA.—*606 Hubbell Bldg.*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MILWAUKEE, WIS.—*Jones Island*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TULSA, OKLA.—*21st and Utica*
NEW YORK, N. Y.—*80 Broadway*
OMAHA, NEB.—*WOW Building*
PONTIAC, MICH.—*2635 Orchard Lake Rd.*
RALEIGH, N. C.—*16 W. Martin St.*
WICHITA, KAN.—*501 KFH Building*

. . . Your Sales Fleet

Continued from Page 162

of the leasing plan, it is well to examine these closely.

Leasing Releases Capital. One of the principal claims made by leasing companies is that capital is released for other purposes in a business so that a profit may be realized through turnover.

If given thought, this argument will prove itself to be unsound. A leasing company does not have unlimited capital and must borrow from a bank or finance company to purchase the cars it is to supply under the terms of the leasing contract. In practice, the leasing company becomes merely the agent for its customer in financing the automotive equipment. In general, however, the leasing company does not enjoy the low interest rates available to many large corporations.

The example has been cited of a chain store organization which was seriously considering leasing its equipment because the amount of capital required to purchase a company-owned fleet was approximately $200,000. It was felt that with this sum of money the company could open another store which would return 18 per cent on the investment. The fallacy of this argument is, of course, that the same capital was not available for both purposes. If the company had tried to borrow $200,000 to open a new store, the bank might refuse the loan on any of a number of grounds. But if the company tried to borrow $200,000 to purchase motor vehicles, the money would be immediately forthcoming because the equipment itself would be security. Motor equipment is security in itself for a loan of up to approximately 70 per cent of its value.

All Expenses Direct Expenses. It is claimed that under a leasing arrangement all automotive expenditures are direct expenses and therefore reduce the tax burden on the corporations using them. This is true, but it is also true for the salesman-owned operation. It should be pointed out that in a company-owned fleet, every item of expense is a direct expense with the exception of profit on depreciation. Such profit is relatively unimportant, since it has only come into the picture during those unusual years when used car prices reached abnormally high levels. It should also be apparent that the money saved in taxes is relatively small when compared with the savings in over-all operation to be effected by company ownership.

Leasing Companies Save Money in Purchasing. Some leasing companies claim that they are able to purchase vehicles and supplies at better prices than can most fleet accounts.

This is true in a distress market when dealers will sacrifice a considerable amount of their profit for a volume sale. It is not true when the market is normal, since most manufacturers recognize large corporations as national fleet accounts and their dealers will, therefore, allow special considerations and discounts to these corporations.

It is certainly not true that a leasing company can buy supplies or other materials at lower prices than can fleet operators generally. Salesmen operating leased cars away from the city in which the leasing company is located must deal with local service stations and must pay exactly the same rates as a man driving a company-owned car. Actually, a company which operates its own equipment is very often allowed special fleet discounts on replacement parts and other materials because it is a national fleet user. A nationally known name carries more weight with a service department or repair shop than does the name of most leasing companies, few of whom are known outside their home city.

Leasing Reduces Administrative

(TURN TO PAGE 168, PLEASE)

the THOROUGHBRED

by KENTUCKY

FOR PARTICULAR LIVESTOCK HAULERS

This ALL WEATHER TRAILER carries a Panel Box with full complement of Panels for each side. Panels are painted color of Trailer.

TANDEM OR SINGLER AXLE—FRAME OR FRAMELESS—OPEN OR CLOSED TOP

KENTUCKY MANUFACTURING COMPANY

R. C. TWAY COMPANY, *Incorporated*, OWNER • 2601 South Third Street, Louisville 8, Ky.

POWER BY
GMC

. . . Your Sales Fleet

Continued from Page 164

Charges. It is claimed by the leasing companies that use of leased equipment reduces administrative costs because all details are handled by the leasing company.

This is not altogether true. Even with maintenance provisions included in the leasing contract the corporation must still supervise expenditures for gasoline, washing, parking, storage, toll bridges and insurance. If a degree of economy and efficiency is to be effected in fleet operation, these expenditures must be supervised carefully. Even if it is possible for the leasing company to assume responsibility for the vehicles this accomplishes little more than to create additional bookkeeping, and certainly does not help to reduce administrative costs.

For example: if a salesman is using a leased car in a distant territory, he must have repairs made at a local service station and pay for them as he would if he was driving a company car. He then includes them on the expense account and his company bills the leasing company and is reimbursed in due course. And all the time the company has been paying maintenance charges in its regular monthly payments to the leasing company. All this, of course, creates extra bookkeeping.

For salesmen, repairs to a leased car often require authorization from and contact with the leasing organization before they can be done. From this it is apparent that leasing neither simplifies matters for salesmen nor does it relieve management of all administrative details.

Leasing Protects Fleet Users Against Inflation. In effect, leasing companies claim that leasing automotive equipment provides a guarantee against inflation. If used cars depreciate badly and new car prices remain high or are increased, the lessee is protected against this spread in replacement cost.

This is only true for the term of the contract, which generally runs one year. If at the end of that time the leasing company finds that used car depreciation has been greater than expected it will not renew the contract at the same rates. Leasing charges are based on a guess as to what the used car market will be a year hence. If its guess was wrong, it takes its loss when it disposes of the used vehicle. It is not likely, however, to write a new contract on the same terms.

END

Please Resume Reading Page 78

ARE DRIVERS "RAILROADING" YOUR VEHICLES?

Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

Handy Governor will stop "railroading" —stop practices which run up costs and wear out vehicles before their time.

The savings in tire, fuel, and lubricant costs, engine repairs, brake maintenance and general maintenance are spectacular. Reduced accident and insurance costs are equally important.

Let us show you some figures on savings — and tell you how little it costs to get them.

KING-SEELEY CORPORATION
ANN ARBOR, MICHIGAN
PLANTS AT
ANN ARBOR, SCIO,
YPSILANTI

Lightweight Trailers Show Little Wear

HERE is an interesting case history on a fleet of light weight, aluminum semi-trailers. Construction details of the trailers are as follows:

1. 34-ft length.
2. 18,000 lb single axle.
3. 36-in. axle setting in order to accommodate heavy loading equipment.
4. Weight is 6700 lb empty.
5. All-steel rear door frame for added strength to the monocoque construction.
6. 12-in. spacing of trailer body posts over axle and landing gear.

These trailers have been transporting a daily average net payload of 42,000 lb each for over a year. They are used in interplant service over private roads by a large, eastern paper manufacturer.

Made by Andrew Industries, Inc., St. Louis, Mo., the trailers, according to the user, show no appreciable wear. No body sag is noticeable, and side doors open and close without difficulty. Maintenance cost has been limited to lubrication only.

Work EASILY, SAFELY...use Snap-on*

HEAVY-DUTY LOXOCKETS

For those bigger Nut Turning jobs!

Here are the wrenches for handling the big nuts on trucks, tractors, buses. Here's *versatility—speed—safety* that every good mechanic appreciates! Here's the *extra* power that helps him do the job easily and efficiently . . . helps get those working vehicles back on the payroll in less time!

Snap-on Heavy-Duty Loxocket wrenches provide the right handle and socket combination to service large, hard-to-reach nuts . . . leverage to break tight ones loose . . . strong, thin-walled sockets to fit into close quarters . . . positive button locking of units to give the security of a one-piece tool.

Your Snap-on Man will gladly demonstrate the tools that will make *your* shop operations more profitable. For new 104-page catalog "U," write

SNAP-ON TOOLS CORPORATION

8026-I 28th Avenue • Kenosha, Wisconsin

432-HD-B Heavy-Duty Loxocket general set—32 tools in sturdy red enameled box.

*Snap-on is the trademark of Snap-on Tools Corporation

Diamond T Tilt-Cab

Continued from Page 83

Three Models Now

FIRST production of the new tilt-cab line will be in three series. Models No. 422C and 422CH cover the general range of city delivery service with GVW ratings from 17,000 to 22,000 lb and tire sizes up to 9.00-20. Engine has a displacement of 271 cu in., and develops 112 hp at 3000 rpm.

For heavier loads and higher speeds on the highway, the larger 522C and 622C Series provide GVW ratings to 26,000 lb and larger engines of 141 and 150 bhp.

A wide range of options is provided, including single-speed, two-speed and oversize rear axles, direct-drive and overdrive transmissions, and six wheelbases, for body lengths up to twenty feet.

Pressed steel frame is of hi-tensile steel. Channel section is 8 1/16 x 3 1/32 x ¼ in. for all but the two longest wheelbases, where 5/16 in. stock is employed. The engine is mounted well up in the frame for maximum accessibility, and angled down at 5 deg to keep the drive line practically straight for the entire range of wheelbases.

Spring System

SPRINGING system is a special feature, marking the first use in commercial vehicles of progressive type "vari-rate" springs at both front and rear axles. These springs are self-adjusting to the load providing the same soft, easy ride whether truck is loaded or empty.

Axle Options

FRONT axles are heavier and of greater capacity in the tilt-cab line, to provide an ample safety factor for increased front-end weight. The heavy-duty Timken FC900 and FD900 Series are standard, with wide track for maximum stability and short turning radius. The range of rear axles includes single-speed hypoid bevel drive models in several sizes and both Timken and Eaton two-speeds with electric shift.

Cooling system includes large tube-and-fin radiator, mounted low to avoid restriction of air supply. A three-ring cushion mounting is employed to isolate the core from the effects of frame distortion. Frontal area of the core is 690 sq in. Radiator grille is a permanent mold aluminum casting, which can be welded in case of damage.

A large unsymmetrical 5-blade fan provides exceptional capacity with quiet operation. It is independently driven by a pair of wedge-type belts, with a separate drive and adjustment for water pump and accessories.

Clutches are of the direct pressure type, and require only pedal adjustment to compensate for wear. Four-speed synchro-mesh transmission is standard in Model 422C; the larger models have five-speed constant-mesh transmissions with helical gears. Brakes are hydraulic, with large Hydrovac booster, and Westinghouse air-brakes are optional in Models 522C and 622C.

END

Please Resume Reading Page 84

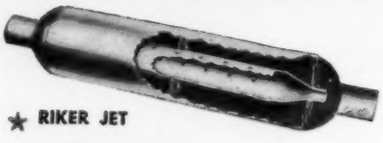
AMY ARMFUL: "WHY DID YOU PARK HERE, HANDSOME, WHEN THERE ARE NICER PLACES FARTHER ON?"

CITY DRIVER: "OH, I GUESS I'M JUST IMPATIENT. WITH ME, THIS IS A CASE OF LOVE AT FIRST SITE."

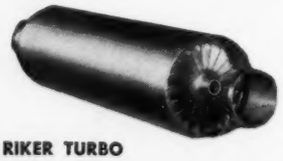
Mileage Proved!

RIKER

Heavy Duty TRUCK and BUS MUFFLERS



★ RIKER JET



★ RIKER TURBO

★ RIKER "QT"

Three, mileage proved, heavy duty mufflers—the Riker Jet, Turbo Jet, and the "QT" (Quiet Tone), offer a choice for truck and bus installation that have received acceptance throughout the entire country. *Proved by leading truck manufacturers on original equipment.* You can be sure of longer life, lower operating cost, *and better public relations,* where you specify, and install, Riker Mufflers.

In addition, Riker offers dual exhaust conversion kits for Ford F-7 and F-8 trucks. Save gas . . . save manifolds . . . save valves.

ASK YOUR JOBBER

—for literature and prices on Riker Mufflers and accessories for complete exhaust systems.

RIKER MANUFACTURING
4809 DETROIT AVE., TOLEDO 12, OHIO

DESIGNERS • ENGINEERS • MANUFACTURERS
HEAVY DUTY MUFFLERS EXCLUSIVELY

Pre-mixing Du Pont "ZERONE" or "ZEREX" Saves Time and Money for United Parcel Service

REG. U.S. PAT. OFF. REG. U.S. PAT. OFF.

HARVEY H. EARL, superintendent of motor equipment for United Parcel Service, says: "'Zerone' and 'Zerex' are used for winter protection of all our 2,000 trucks. They give complete protection against rust and corrosion. Pre-mixed Du Pont anti-freezes are great time savers—money savers, too. Hydrometer tests have been done away with."

Both "Zerone" and "Zerex" mix completely with water in all proportions. Since their special Du Pont chemical rust inhibitors won't separate from solution while standing, you can make up a pre-mix of properly proportioned solution of each, and keep it constantly on hand to replace cooling system losses. Actual tests prove that such losses are of the anti-freeze and water *solution*, not anti-freeze alone. Losses should not be replaced with concentrated anti-freeze. With a pre-mixed solution, anti-freeze needs can be gauged exactly —costly overprotection is avoided.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

HERE'S WHY OTHER FLEET MEN DEPEND ON DU PONT ANTI-FREEZES TO GIVE COMPLETE PROTECTION, TO CUT MAINTENANCE COSTS.

"Pre-mixing saves guesswork." "We've never had a cracked block from lack of protection, are well satisfied with both 'Zerone' and 'Zerex.' Pre-mixing saves guesswork, saves loss of anti-freeze."

Christian Oswald
Peter P. Ellis Co.
Detroit, Michigan

"Large saving of time." "By having a uniform mixture, we test our anti-freeze only once a month. Otherwise it would have to be tested daily in cold weather."

J. Buckley
Melvin Trucking Co.
Peoria, Ill.

"Saved ⅓ in volume." "We've used 'Zerone' and 'Zerex' for many years. We always know that our equipment is protected. Our savings are about one-third in volume."

Alvis Dennison
Alvis Dennison
Construction Co.
Albuquerque, N. M.

FLEETMAN'S LIBRARY

Camelback for tire retreading and recapping is covered in a booklet you can get by writing Lee Tire and Rubber Co., Conshohocken, Pa.

CLAW
TIRE CHAINS
..."traction insurance" specified by the biggest operators
The bigger the fleet the sharper the eye kept on road schedules and operating costs. Fleet operators with plenty of experience in buying and using tire chains tell us CLAWs not only keep their cars and trucks moving in "rough" weather, but they also stand up under the continual pavement-pounding.
For winter weather traction insurance at low cost per mile, equip all vehicles now with CLAW Tire Chains.

CLAW Tire Chains are made in all sizes to fit all automobiles, trucks and busses. Singles and duals. All feature the easy-on "finger pressure" Blue Boy fasteners.

COLUMBUS McKINNON

CHAIN CORPORATION

General Offices and Factories: **TONAWANDA, NEW YORK**

Plants at Angola, N. Y.; Dixon, Ill.; St. Catharines, Ont., Can.; Johannesburg, South Africa

Arc welding machines made by Air Reduction Co. are fully described in a catalog available by writing Air Reduction Sales Co., 60 East 42nd St., New York 17.

Self-adjusting dockboards manufactured by Dockboards, Inc., are described and specifications given in a new 4-page bulletin. For a copy, write the company at 316 East Silver Spring Dr., Milwaukee 11, Wis.

Roller chain and sprocket specifications are given in a new catalog you can get by writing Dodge Mfg. Corp., Mishawaka, Ind.

Pumps made by Tuthill Pump Co., 939 East 95th St., Chicago 19, are described in two new catalogs. Write for Catalog No. 101 on small industrial pumps and Catalog No. 102 on general purpose pumps.

Electric power tools made by Thor Power Tool Co. are described in their new 40-page Catalog No. 39-A. For a copy, write to Sales Promotion Dept., Thor Power Tool Co., 175 North State St., Aurora, Ill.

Body parts and services available from Hart Metal Products Corp. are covered in a new, spiral-bound, 140 page book available from the company. Address is 3333 Hammond Ave., Elkhart, Ind. Cross sills, rub rails, door posts, fenders are a few of the parts described with complete specifications.

Retractable wheel chock recently announced by Calumet Steel Castings Corp. is described in a folder available by writing the company at 1610 Summer St., Hammond, Ind.

Tire, battery and accessory replacement data manual, published annually by B. F. Goodrich Co., lists information for light trucks from 1938 through 1953. Copies are available at Goodrich district tire offices.

Automotive electrical systems are completely described in two books available from The Electric Auto-Lite Co., Toledo 1, Ohio. The first, a 178-page maintenance and operation manual has 230 illustrations, gives a full story on repair. The second describes test specifications. The Maintenance and Operation Manual, No. S-24, costs $1.50 and the Specifications Book, No. S-24CA, costs 50¢.

Replacement axle shafts for all trucks and buses including 1952 models are listed in Catalog No. 17 and supplements Nos. 1 and 2 are available from The U. S. Axle Co., Pottstown, Pa.

Safety film directory listing 963 motion picture and sound-slide films on traffic and industrial safety has been announced. Copies are available at 75¢ each from the National Safety Council, 425 North Michigan Ave., Chicago 11. Ask for the "1953-54 Edition, National Directory of Safety Films."

Tubing tools are described in a new 8-page catalog available from The Imperial Brass Mfg. Co., 1200 West Harrison St., Chicago.

Super FLEETWAY

With Super-Tenacity Rayon...

the first cord expressly engineered

for extra-tread truck tires!

Inside and out, this new extra-tread truck tire has been designed and built to deliver the full plus mileage potential of an anti-skid actually up to 44% deeper. And to support the extra tread depth of the U. S. Royal Super Fleetway, a completely new *stronger* and *tougher* rayon cord has been engineered into the carcass—making possible not only far *greater original mileage* but *more recaps* through its increased carcass strength.

It is the combination of these features—plus advanced U. S. Royal construction—that gives you an extra-tread highway tire which delivers maximum original mileage and extra recap miles for lowest cost per mile.

Super-Tenacity Rayon

- 20% stronger than ordinary rayon!
- up to 79% more flex-fatigue resistance!
- as much as 20% more rupture protection!

Extra Tread Depth & Thicker Undertread

Deeper anti-skid increases original mileage. Thicker undertread and stronger carcass provide a sounder base for recapping.

New "Safety-Bonded" FLEETWAY CONSTRUCTION

- Micro-Mixed Tread Compound
- Exclusive Anti-Skid Design
- Air-Cooled Shoulders
- Double Shock Pads
- Rubber-Riveted Tread
- Road-Level Profile
- Super-Adhesive Cord Bond
- Added Shock Insulation

Also available in All-Nylon construction for certain severe services.

At your U. S. Royal Dealer's now—phone him right away!

RUBBER COMPANY

Dollars Cut from Delivery Cost . . .

Continued from Page 96

Oil Costs

THE next item is lubricating oil. The cost of lubricating oil as compared to the total vehicle cost is relatively small. However, the rate of oil consumption is one of the best indicators of the condition of the engine. This information should be available at least on a monthly basis.

Parts Control

PARTS and repairs and shop supplies are major cost factors in fleet operation. One of the most elementary steps necessary to control this item is to know what is bought, where it is being used and how many miles, or months of service are obtained from various units.

REYCO
You'll rarely require
SERVICE
for your REYCO TANDEM,
but it's readily available
WHEN YOU NEED IT!
You never have to worry about your equipment and pay-loads being tied up when you have the Reyco Suspension.
Parts and service are available at more places, coast-to-coast, than with any other tandem.
More major trailer manufacturers use the Reyco Tandem as original equipment than any other tandem, and Reyco distributors and their dealers all over the nation offer parts and service for the Reyco Tandem.
This makes the Reyco Guarantee that your service parts cost will not exceed $25 for twelve months an even more effective and helpful guarantee.
ASK YOUR TRAILER MANUFACTURER OR REYCO DISTRIBUTOR OR DEALER FOR FURTHER DETAILS
REYCO
REYNOLDS MANUFACTURING CO.
SPRINGFIELD MISSOURI

Maintenance Costs

BODY repairs and painting costs can be a large factor in vehicle costs. The use of lightweight all-metal bodies has become more prevalent in recent years.

Maintenance labor cost is in all probability the outstanding item of fleet expense. Of prime importance is the selection of the proper technical supervisory personnel. Such personnel is responsible for the selection and proper training of maintenance staff. The setting-up of routine maintenance schedules, the setting-up of preventive maintenance programs, the scheduling of proper working hours to dovetail with time the trucks are available, these are but a few of the many duties of the supervisory personnel.

Tire costs can be a major factor. The difference in yearly cost per truck on a 50 miles a day route can be as much as $68.00, depending on whether tires last 10,000 or 30,000 miles. The proper selection of tire size is very important. Proper tire inflation pressures and regular checks on tires for pressure, cuts, bruises, misalignment, removal for recapping, all help to lengthen tire life. Here again, a record of each tire is essential in order to obtain the facts.

A record of road failures should be kept. Such a record can point to recurring difficulties so that proper corrective measures can be taken.

Safety

A SAFETY program is a "must" in every fleet operation. This means careful selection of routemen, thorough physical and psychophysical examinations, and a continual program of instructions in safe driving methods, in care, courtesy and common sense in vehicle operation.

Vehicle Replacement

THE subject of vehicle replacement is one which can be discussed at great length. Many formulas have been developed on this. Considering only the type of vehicle used for multi-stop delivery, the major factor to be considered in a replacement program is obsolescence. The vehicle may become too small or too large for the route, or its design or appearance may be outmoded, or replacement parts may not be available for various reasons. All of this presupposes that the equipment is properly maintained. The theory that equipment may be abused and neglected and traded in more frequently for new equipment, is wasteful and has no place in modern business.

We have often been asked "What make of truck do you find most economical to operate?" or, "What make of truck do you recommend?" There is

(TURN TO PAGE 178, PLEASE)

"Our Tire Maintenance Program Pays Big Dividends in Tire Mileage!"

This is what Lewis P. Hankins, Superintendent of Equipment, Hemingway Bros. Interstate Trucking Co., New Bedford, Mass., says:

"The money that is saved by proper tire maintenance can easily be the difference between financial success and bankruptcy for any fleet! We consider Schrader Valves, Valve Caps and Cores, Gauges and Airline Equipment essential to proper fleet tire maintenance.

"In each Hemingway Bros. terminal our tire maintenance man gauges and records tire pressures daily with a Schrader 7188BH Gauge. A Schrader 8106B Trutest Special Gauge is used regularly to check accuracy of all gauging-inflating equipment.

"A Schrader Valve Cap, which costs so little, controls a lot of money! Daily inspections include making sure that every tire valve has one."

Whether *your* fleet is big or small, it pays to use finest quality products. *Specify* Schrader when you order Tire Gauges, Tire Valves, Valve Caps and Cores, and all Airline Fittings from your supplier.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
470 Vanderbilt Ave., Brooklyn 38, N. Y.

Mr. Hankins records tire pressure, while John S. Hemingway, Tire Maintenance Supervisor, uses Schrader 8106B Trutest Special Gauge.

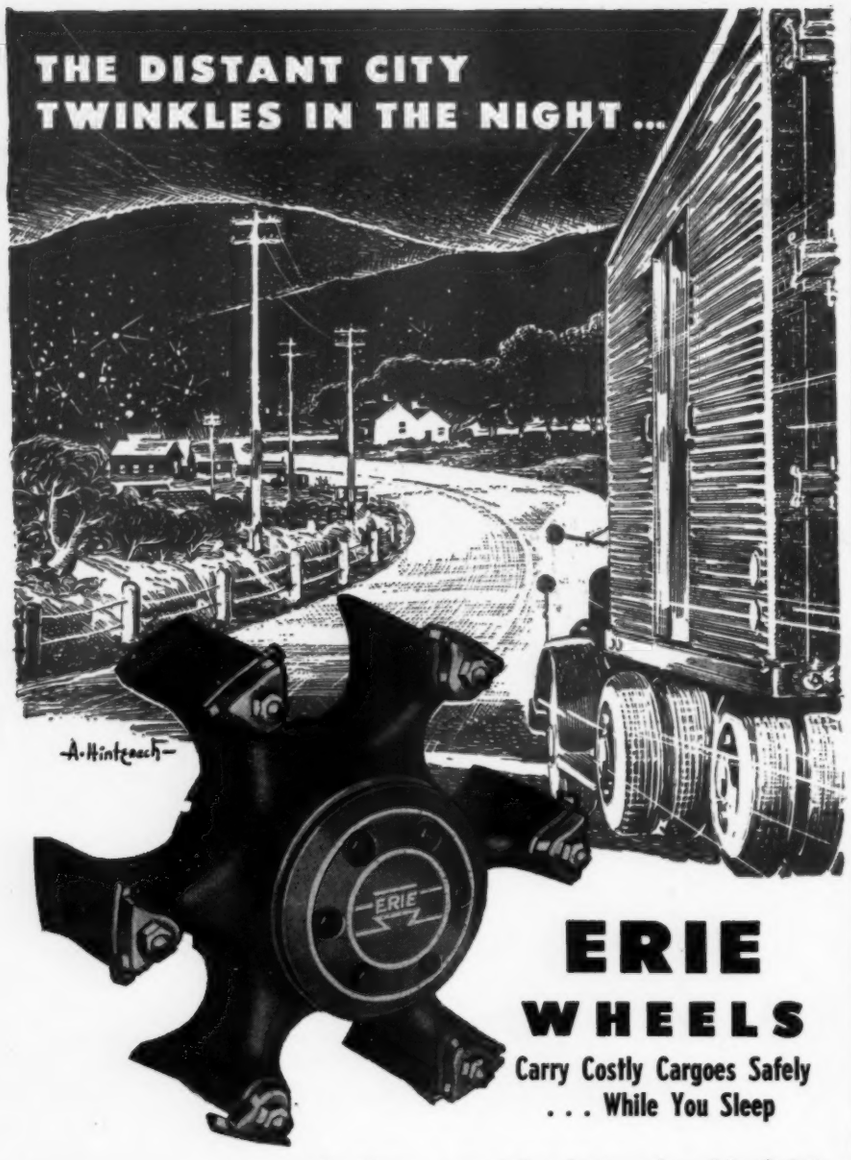
7611 Heat-resisting Core

7612
Heat-resisting Cap

Schrader
REG. U. S. PAT. OFF.

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT



ERIE WHEELS

Carry Costly Cargoes Safely . . . While You Sleep

Quality . . . must be designed and built into the load-bearing wheels rolling great cargo trucks through the night . . . They must be strong . . . to withstand the pounding of highways. They must be of Tubular-Spoke design . . . to maintain balance . . . and to cool tires and brake drums . . .

Erie Brake Drums . . . of fine quality alloy iron . . . wear evenly . . . last longer.

These are but a few of the outstanding qualities of Erie Wheels and Drums on which the night drivers can depend.

Specify . . . Erie Wheels and Brake Drums

Erie Wheels

ERIE MALLEABLE IRON COMPANY

Automotive Wheel Division

ERIE • PA.

150

. . . Delivery Cost

Continued from Page 176

no easy answer to such questions. Each operation must be studied individually before arriving at a decision. Some important factors are:

(a) What is the reputation of the manufacturer and the local dealer and their financial responsibility in the days ahead?

(b) Does the manufacturer make frequent changes in models and parts which may make standardization difficult?

(c) Are replacement parts available locally and at a reasonable cost?

(d) How do the individual truck units compare in size and quality with competitive makes?

If the proper size and type of vehicle is selected for the job to be done and given proper maintenance, the nameplate on the hood is not as important as many think.

Management should have at least a monthly report of detailed cost figures on each vehicle so that any costs which are out of line can be spot-lighted and corrective measures taken. Care must be taken in making comparisons of costs to ensure that like things are compared. In other words, cost per mile of one vehicle averaging 20 miles per day should not be compared with a vehicle averaging 100 miles per day. Similarly trucks in various branches may have differences in operating conditions which may make comparative costs unfair for one or the other. It is better to compare each vehicle or each group with its record for the previous months, or the same months a year ago to see the upward or downward trend of costs. Then management must get at the reasons if the costs are going up and see if they can be improved.

Fleet Economy

WHEN we talk about economy we assume that fleet purchases are made at the lowest possible prices. It is, therefore, surprising to find when we analyze fleet set-ups that prices paid for ordinary supplies will vary considerably. Take an item like gasoline for example. If a fleet uses as little as 100,000 gallons of gasoline per year, a difference of even one-half cent per gallon in contract price means a difference of $500 per year.

It is the small savings in each item, multiplied by thousands of units, thousands of miles, thousands of gallons, thousands of days, that total large in the aggregate.

END

Please Resume Reading Page 98

BOWER
ROLLER BEARINGS

Precision made for rugged service

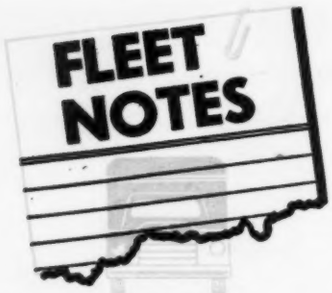
BOWER tapered roller bearings are Spher-O-Honed . . . *honed* raceways, with contours matching the roll ends for better load distribution and quieter operation. Bower's higher flange means a bigger oil groove, *positive* lubrication. Install Bower, and you install *dependability!*

Ask Your Federal-Mogul Jobber

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN

BEARING FEDERAL Mogul SERVICE

Pilot Freight Carriers, Winston-Salem, N. C., are erecting a $65,000 terminal in Buffalo, N. Y.

Akers Motor Lines, Inc., Gastonia, N. C., has opened a $150,000 branch maintenance building at its Atlanta, Ga., terminal.

Lee and Eastes, Inc., Portland, Ore., is celebrating its 30th anniversary this year.

Security Cartage Co., Fort Wayne, Ind., is celebrating its 10th anniversary this year.

Express Freight Lines, Inc., begins construction this month on a $350,000 terminal and garage in Milwaukee, Wis.

Ward Trucking Corp., Altoona, Pa., completed its best six months during the first part of the year. Employees were paid a bonus in silver dollars.

Corea's Motor Express, Inc., Utica, N. Y., is planning a $100,000 terminal and office building there.

Meeks Motor Freight, Inc., Louisville, Ky., has been purchased by Walter E. Test, Detroit.

Milwaukee and Suburban Transport Co., Milwaukee, Wis., has ordered 21 40 ft, 51 passenger buses.

Pacific Electric Railway Co. has put 35 buses with air suspension into service.

Montreal Transit Commission, Montreal, Canada, has 40 new Mack buses on order.

Arrowhead Freight Lines, Los Angeles, Cal., has announced through trailer service from Los Angeles to Chicago in conjunction with **Interstate Motor Lines, Inc.**

Davidson Transfer and Storage Co., Baltimore, Md., has opened a new terminal in Trenton, N. J.

A. R. Pearson Truck Co., Los Angeles, Cal., has just moved into a fully equipped new terminal in that city.

Riss and Co. has opened a new terminal in Trenton, N. J. Feature is an 8-door, drive through repair shop.

Ward Trucking Co., Altoona, Pa., has opened a new terminal in Johnstown, Pa.

Western Express, Great Falls, Mont., a new firm, has bought out **Hi-Way Motor Freight,** Lewistown, Mont.

Great Southern Trucking Co., Jacksonville, Fla., reorganizing after purchase by James A. Ryder, has purchased over $1,000,000 worth of new equipment, has more on order. In addition, a $3,000,000 building program has produced new terminals in Anniston, Ala., and Asheville, N. C., and under construction are terminals in Miami, Fla., and Charlotte, N. C. Plans include a $200,000 terminal in Birmingham, Ala., and a $1,000,000 headquarters and terminal in Jacksonville.

Ringsby Truck Lines, Inc., Denver, Colo., has opened a branch office in Fresno, Cal.

Spector Motor Service, Chicago, has moved its West coast offices to the Garfield Bldg., Los Angeles, Cal.

Super Service Motor Freight, Inc., Nashville, Tenn., **Consolidated Freightways,** Portland, Ore., and **McLean Trucking Co.,** Winston-Salem, N. C., won first, second and third place, respectively, in the 1952 National Claim Prevention Contest sponsored by American Trucking Assn.'s Freight Claims Council. Special recognition went to **Mason and Dixon Lines, Inc.,** Kingsport, Tenn.; **Akers Motor Lines,** Gastonia, N. C.; **Pacific Intermountain Express,** Oakland, Cal.; **Needham's Motor Service,** Philadelphia; **Johnson Motor Lines,** Charlotte, N. C.; **Olson Transportation Co.,** Green Bay, Wis.; and **Murphy Motor Freight Lines,** St. Paul, Minn.

For Better Performance
Armor-Flex
MOTOR MOUNTS
for trucks
Defective Motor Mounts can cause a trucker all kinds of trouble—such as engine vibration, motor misalignment, difficult gear shifting and clutch chatter. Play it safe. Check Motor Mounts regularly. Replace when necessary, from the Armor-Flex complete line of truck Motor Mounts.
For Greater Comfort
Armor-Flex
FLOOR MATS
for trucks
Here are the qualities to look for in floor mats for trucks: They must lie flat — fit snugly in all corners and insulate cab against dust, heat, fumes and drafts. Armor-Flex Fitted Floor Mats are made of heavy rubber with thick insulating felt backing. They lie flat "over the hump."
ARMOR-FLEX
Doan MANUFACTURING
For Greater Safety
Armor-Flex
PEDAL PADS
for trucks
Truckers watch every detail that spells safety. That's why the tread on pedal pads and accelerator pedals requires frequent check-ups. A smooth tread can be the cause of an expensive accident. Armor-Flex replacement pedal pads add an extra measure of safety.
Doan MANUFACTURING CORP.
1761 LONDON ROAD • CLEVELAND 12, OHIO

Trucker Switches to ALUMINUM WHEELS
Fleet Earns $7,500 Extra per Year

Alcoa Forged Aluminum Disc Wheels eliminate balancing troubles, increase tire mileage!

Weight saving was Acme Transportation's first reason for fitting fifteen truck-trailer units with Alcoa Aluminum Forged Disc Wheels. And each unit has since earned a $500 per year bonus due to extra pay load. A $7,500 reason to recommend Alcoa Wheels to other operators.

But the fifteen units—many with over 250,000 miles of rugged mountain service—proved Alcoa Wheels had other advantages. Their perfect roundness and balance eliminated front end balancing troubles and increased tire mileage. Their corrosion resistance eliminated painting, made tire changing easier.

Acme states, "In view of our experience, we would use the Alcoa Wheel even if weight saving were not a consideration, because it is the best balanced, strongest, most economical wheel we have seen, as well as being by far the lightest."

Alcoa Aluminum Forged Disc Wheels are available as optional equipment through your truck or trailer manufacturer. ALUMINUM COMPANY OF AMERICA, 1871-J Alcoa Building, Pittsburgh 19, Pennsylvania.

Alcoa Aluminum

ALUMINUM COMPANY OF AMERICA

FACTORY FLASHES

White Motor Co., Cleveland, Ohio, and **Autocar Co.**, Ardmore, Pa., have announced that directors of both companies have agreed to the plan whereby White would acquire Autocar in exchange for preferred White stock. Autocar's interest in **Highway Trailer Co.**, Edgerton, Wis., is not involved.

GMC Truck and Coach Division, General Motors Corp., Pontiac, Mich., has announced construction of a new wholesale sales and service building in Denver, Col.

Strick Co., Philadelphia, has announced a 35 ft long trailer that has a width of 92½ in.

The B. F. Goodrich Co., Akron, Ohio, has announced organization of the company into two divisions, the Tire and Equipment Division and the Industrial Products Division.

Reynolds Metals Co., Louisville, Ky., has appointed **Meier Brass and Copper Co.**, Detroit, as a distributor.

Some's Terminal Outfitters has opened a new branch on Route 17, Paramus, N. J.

Autocar Co., Ardmore, Pa., has opened a $200,000 sales and service headquarters in Charlotte, N. C.

LeRoi Co., Milwaukee, Wis., has formed a new division for manufacture of front end loaders and truck mounted mixers.

Reo Motors, Lansing, Mich., now has a mobile sales room. Spectator-operated exhibits of Reo equipment have been mounted in a 32-ft trailer.

Marion Metal Products Co., Marion, Ohio, is celebrating its 30th anniversary this year.

Champlin Refining Co., Enid, Okla., will handle distribution of **Dayton Rubber Co.**, Dayton, Ohio, tires in a 12-state area west of the Mississippi River.

Homan and Co., Inc., Cincinnati, Ohio, have appointed the following as distributors: **Jordan Equipment Co.**, Oakland, Cal.; **Gorman and Co.**, Los Angeles, Cal.; **S and P Brake Service Wholesale**, Billings, Mont.; **Leland Trailer Co., Inc.**, Spokane, Wash.; and **Truck Parts and Equipment**, Reno, Nev.

GMC Truck and Coach Division, General Motors Corp., Pontiac, Mich., is celebrating its 30th anniversary this year.

United States Rubber Co., New York City, has opened a new branch in Denver, Colo.

Chicago Pneumatic Tool Co., New York City, has acquired the assets of **The Jacobs Mfg. Co.**, West Hartford, Conn. Operation will continue under the same name as a subsidiary of Chicago Pneumatic Tool Co.

Wisconsin Motor Corp., Milwaukee, Wis., has purchased the plant in that city formerly occupied by Sterling Motor Truck Co.

Aeroquip Corp., Jackson, Mich., has announced purchase of a plant in Van Wert, Ohio, formerly occupied by Sterling Electric Motors. An additional 5500 sq ft of floor space have been added to the company's plant in Burbank, Cal.

Six Wheels, Inc., Los Angeles, Cal., has changed its name to the **Maxi Corp.** Maxi will handle all manufacturing operations and sales of crane carriers and related parts. Sales of tandem units, winches and other automotive equipment will be handled by a sales affiliate, **Six Wheels, Inc.**

DeVilbiss Co., Toledo, Ohio, was awarded an over $1,000,000 government contract covering 140 paint spray exhaust booths.

PREFERRED
... for Simplicity and Accuracy ...

These KIMBLE Single-Solution Anti-Freeze Testers will make an instant hit with your men because they give the correct answers quickly and simply. Outstanding in every way, they are preferred because of—

SIMPLICITY — Testers are DIRECT-READING. The extra length, easy-to-read scale on the float and the big 10° graduations on the thermometer give you the correct answer fast.

ACCURACY — Made by the nation's foremost manufacturer of scientific glassware. Precision calibrated. Has big clear figures sealed under glass. Always stay clean and easy to read.

DURABILITY — Extra heavy fully annealed jar. Float is beaded to prevent sticking. Tip has non-roll, hex-shape base.

	Net Price to Fleet Owner
No. 548-TA for Ethylene Glycol such as *"Prestone," "Zerex"* etc.....	$2.25
No. 550-T for Alcohol.....	2.25
No. 553-T for Methanol such as *"Zerone," "Trek"* etc.....	2.25
No. 554-T for Propylene Glycol....	3.00

No. 556-TA Universal Anti-Freeze Tester tests all basic solutions of alcohol, methanol and ethylene glycol. Preferred for simplicity and accuracy. Net Price to Fleet Owner.....$5.50

THE IMPERIAL BRASS MFG. CO.
1209 W. Harrison St., Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ont.

Manufactured by Kimble Glass Company subsidiary of Owens-Illinois Glass Company

Ask for Bulletin 398

IMPERIAL
Brass Fittings • Flexible Fuel Lines • Shut-off Valves
Tube Working Tools • Swivel Nuts • Service Aids

LAY-UP TIME FOR REPAIRS ON THIS BODY •

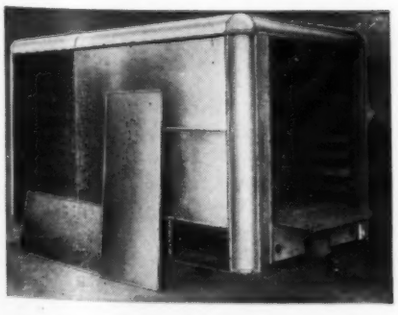
• 6½ HOURS (and THAT was no accident)

A skidding oil tank truck, traveling at high speed, plowed into this 12-ft. insulated plywood-lined Lindsay Structure body. The damage was confined to point of impact—the rest of the body showed no sign of damage or movement.

LS builder Walsh Body & Trailer Co., Somerville, Mass., reports that two men completed the repair job in 6½ hours.

Quick repair—plus the other unique LS advantages of light weight with great strength, rugged durability and long life...can all add up to years and years of dependable low-cost operation for you.

For over-all operating economy and efficiency—equip your new truck with a functional LS body *built for your job.* We will gladly work with you and the body manufacturer of your choice. For information, write



If damaged, LS sections can be quickly replaced from the outside—most replacement parts are carried in stock by LS body builders throughout the country.

LINDSAY STRUCTURE

Lindsay Structure, Inc.
5000 West Dempster St., Skokie, Illinois

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

INTRODUCING . . .

. . . **Frank T. Grice,** as Freight Claim Section administrative assistant, American Trucking Assns., Inc., Washington, D. C.

. . . **Albert E. Spadie,** as claim agent, Hennis Freight Lines, Inc., Winston-Salem, N. C.

NIEHOFF
NIE-TRON
Super Heavy Duty
COIL

UN-177
Ultra High Output • Low Primary Draw • Does not require high capacity condenser • Maximum Insulation

Guaranteed for 100,000 Miles!

Replaces any coil on any car produced in the past 5 years without changing condenser or mounting brackets. Will fire an engine with battery as low as 2 volts. Recommended for all 6 volt systems...cars, buses, trucks and tractors.

HAVE YOUR JOBBER SHOW YOU NIE-TRON TODAY!

C. E. NIEHOFF & CO.
6925 W. LAWRENCE AVE. · CHICAGO 10, ILL.
30th Anniversary Year

Branches:
Boston 34, Mass., 254 Brighton Ave.
Los Angeles 15, Cal., 1330 W. Olympic Blvd.
New York 19, N. Y., 250 W. 54th St.

. . . **Frederick F. Warnock,** left, assistant regional sales manager, and **Howard W. Cook,** right, Chester, Pa., district sales manager, southeastern sales region, Ford Division, Ford Motor Co.

. . . **Arthur D. Paxton,** as president, California Motor Transport Assns., Inc., Los Angeles, Cal.

. . . **Lee Roy Ridout,** as safety supervisor, Strickland Transportation, Inc., Dallas, Texas.

. . . **Albert G. Crockett,** Sales Development Division director, Mack Trucks, Inc., New York City.

. . . **Gerald E. Ledbetter,** assistant sales manager, Champion Spark Plug Co.

. . . **E. L. Williams,** as Highway and Contract Transportation Division director, U. S. Post Office Department.

. . . **John A. Reid,** as Chicago sales district assistant manager; **A. J. Cheponis,** as budget sales department manager, and **George W. Robinson,** as advertising and merchandising department assistant manager, Seiberling Rubber Co., Akron, Ohio.

. . . **Joseph Strick,** southern Cal. regional sales manager, Strick Co., Philadelphia.

. . . **Chester T. Morledge,** general manager, merchandising, Tire and Equipment Division, B. F. Goodrich Co., Akron, Ohio.

. . . **Herbert L. Freer,** as Machine Tool Division general sales manager, and **George A. Raiche,** as advertising manager, Van Norman Co., Springfield, Mass.

(TURN TO PAGE 186, PLEASE)

KOLD-HOLD truck refrigeration WILL PAY FOR ITSELF!

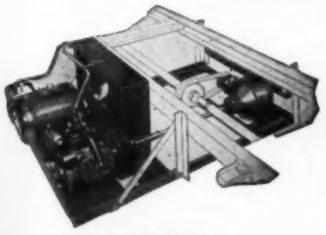
Every day is judgment day in your business. Your customer's judgment determines your success — or failure.

In striving for favorable judgments from your customers, natural color, full weight, garden flavor — these three factors make up the taste test that determine whether your products are preferred. Kold-Hold dependable truck refrigeration keeps you ahead of your competition, in delivering full flavor. Its low cost is cheap customer insurance.

For example, one user reports, "The truck has been our best advertisement we ever had. Our business has increased about 20% in 4 months."

In addition to the advantages in customer satisfaction you also eliminate spoilage losses, enable your trucks to make longer hauls with a full day's load and cut down handling time. With these benefits you can easily see why Kold-Hold truck refrigeration pays for itself.

KOLD-HOLD *can answer any refrigeration problem!*



KOLD-TRUX

Which do you prefer . . . Mobile or Hold-Over truck refrigeration? Kold-Hold can give you either or a combination of both.

When your weather worries start, pick out the routes with the biggest refrigeration problems and call on Kold-Hold to give you a satisfactory solution. They will give you the right combination for your needs from such highsides as the Kold-Trux Mobile Unit, a mounted compressor, or make-and-break assemblies, coupled to such lowsides as Kold-Hold Hold-Over Plates, Thin Plates, Serpentine Quick-Action Plates, or Blowers.

Why not give us the details of your problems and let our engineers find the most efficient solution for you. Write today for details.

HOLD-OVER PLATES

Tell us your truck refrigeration problems and send now for complete data and literature.

KOLD-HOLD

Introducing . . .

Continued from Page 184

. . . **William J. Kennedy** and **Peter Jaremko,** as managers, Indianapolis, Ind., and Washington, D. C., automotive divisions respectively, Van Norman Co.

. . . **William W. Pace,** as advertising manager, South Wind Division, Stewart-Warner Corp., Indianapolis, Ind.

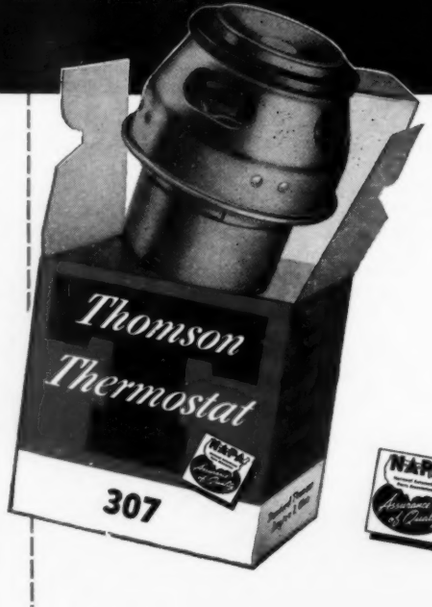
. . . **Hugh Hetherington,** as Jackson, Miss., branch manager, Fruehauf Trailer Co., Detroit.

. . . **Arthur Kelly,** left, president; **Joseph A. Hoban,** center, replacement sales vice president, and **E. F. Tomlinson,** right, equipment sales vice president, Tire and Equipment Division, The B. F. Goodrich Co., Akron, Ohio.

Depend on Thomson —the most complete line for cars and trucks of all makes!

"Electro-Fused"

FOR EXTRA DEPENDABILITY



For quality, coverage and service, depend on Thomson. Thomson's line is the most complete in the business—including 21 *heavy-duty* numbers, plus complete coverage of cars and light trucks. And every stat is "electro-fused" by heat induction for extra accuracy, dependability and long life. Ask your NAPA Jobber!

STANDARD-THOMSON CORPORATION
DAYTON 2, OHIO

. . . **Richard F. Doran,** national fleet manager, The Schnabel Co., Pittsburgh, Pa.

. . . **Ernest Brower,** truck, bus and trailer wheel sales manager, The Budd Co., Detroit.

. . . **R. L. Schutte,** as sales manager, and **P. H. Staerk,** as advertising manager, Ahlberg Bearing Co., Chicago.

. . . **Dudley J. Kingman,** as Cleveland factory branch manager, Fruehauf Trailer Co., Detroit.

. . . **J. A. Hill,** as vice president and sales manager, Thor Power Tool Co., Aurora, Ill.

. . . **John J. Healy,** sales manager, Brake Drum Division, Copperweld Steel Co., Glassport, Pa.

. . . **W. A. Patterson,** general sales manager, Heater Division, Eaton Mfg. Co., Cleveland, Ohio.

. . . **William D. Griffiths,** as public relations director, Summit Fast Freight, Inc., Akron, Ohio.

(TURN TO PAGE 188, PLEASE)

...means GREATER RELIABILITY on any hauling job!

Powerful Bendix-Westinghouse Air Brakes Provide Sure, Dependable Stops for Rugged Diesel Tankers!

Imagine this if you can. You're behind the wheel of a heavy diesel tanker headed north toward San Francisco over California's rugged coastal ranges. Here, in addition to normal hazards of the highway, you'll encounter mile after mile of steep downgrades and sharp, tight curves that at times **require maximum braking performance.** But you're prepared, on this imaginary journey of yours, because if you're anything like the men who *actually* do travel this route, you're equipped with Bendix-Westinghouse—the world's most tried and trusted air brakes. That's because these **mighty brakes,** built by the industry's most experienced manufacturer, deliver the extra stopping power and performance that assure the **safest, surest, most dependable braking control** and longest service life in the business. And these are factors that mean reliable, economical operation on any hauling job—from the roughest to the most routine! So why not cash in on all this **added safety and the savings that go with it** by putting this profitable performance to *actual* use? No matter what type trucks you operate specify Bendix-Westinghouse, the world's most tried and trusted air brakes!

Bendix-Westinghouse

THE WORLD'S MOST TRIED AND TRUSTED

AIR BRAKES

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • ELYRIA, OHIO • BERKELEY, CALIF.

Introducing . . .

Continued from Page 186

. . . **Robert C. Thurman** and **Denzil Coffey,** as northeastern and southeastern district managers respectively, Marmon-Herrington Co., Inc., Indianapolis, Ind.

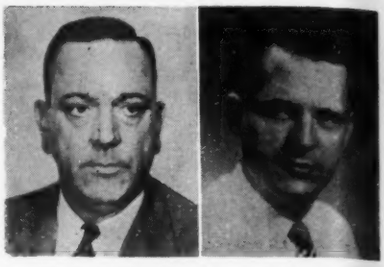
. . . **Robert E. Baxter,** as truck bodies and special equipment sales manager, Fruehauf Trailer Co., Detroit.

. . . **Scott M. Kennedy,** as sales director, Permite Automotive Service Division, Aluminum Industries, Inc., Cincinnati, Ohio.

. . . **Wendelin E. Bueche,** as vice president, Great American Transport, Inc., Detroit.

. . . **Robert V. Cummins,** as sales promotion department head, Marmon-Herrington Co., Inc., Indianapolis, Ind.

. . . **Russell W. Higgins,** assistant sales manager, Spark Plug Division, The Electric Auto-Lite Co., Toledo, Ohio.



. . . **E. Dwight Summers,** left, southeastern district sales manager, and **F. E. Walker,** right, central-western district sales manager, Twin Coach Co.

. . . **A. P. Ross,** as superintendent of equipment, Akron Transportation Co., Akron, Ohio.

. . . **Donald Lyell,** as safety and personnel director, Brady Motorfrate, Chicago.

. . . **F. B. Lowell,** sales manager, Rochester Products Division of General Motors Corp., Rochester, N. Y.

. . . **Byron S. Snowden,** merchandising manager, trucks, Dodge Division, Chrysler Corp., Detroit.

. . . **Jack C. O'Toole,** as general sales manager, Automotive Division, Bardwell and McAlister, Burbank, Cal.

. . . **George Abbott** and **J. L. Woodhead,** as district managers in the Richmond, Va., and Atlanta, Ga., territories respectively, Maremount Automotive Products, Inc., Chicago.

. . . **Wilmot Sandham,** southwestern regional manager, Cummins Engine Co., Columbus, Ind.

. . . **Wayne Hill,** Los Angeles factory branch manager, Trailmobile, Inc., Cincinnati, Ohio.

. . . **John C. Crim,** as general manager, Campbell "66" Express, Springfield, Mo.

. . . **John H. Smith,** as maintenance engineer, Niagara Motor Freight, Syracuse, N. Y.

use your head
. . . . increase your
pay loads with
HOMAN
PRECISION-BUILT
LANDING GEARS
Available in aluminum or steel and in different models to suit your specific operation, Homan landing gears are adaptable to any make, size or style of trailer. Write for complete details and specifications today.
Add extreme lightness to a super-strong landing gear, and you get bigger, heavier pay loads in your trailers. Homan landing gears are expertly designed, precision built for longer trouble-free service. With their 2-speed reduction unit, you save time and handling effort. Completely sealed lubrication insures maximum ease of operation under all conditions.
For Fast Dependable Service Ship by Truck Trailer
HOMAN
AND COMPANY, INC.
READING · CINCINNATI 15, OHIO
ESTABLISHED 1847

"We average 80,000 miles on NYLON CORD TIRES hauling 10-ton loads of asphalt"

"Hauling asphalt over rough gravel roads, the tires on our thirty-eight dump trucks take plenty of abuse," says Carl Lizza, vice-president of Lizza Brothers, Inc., general contractors in Oyster Bay, L. I. "With loads averaging 10 tons, they have a doubly tough job—to support the weight and withstand the constant bruising, too.

"Regular tires just didn't stand up, so in 1948 we equipped our trucks with nylon cords. They've averaged 80,000 miles apiece, taken recaps two and often three times and given us 50% better wear than any tire we've used in eighteen years of business. We have never had a blowout, and from the looks of things never will. From a dollar standpoint, nylon cords have consistently saved us money and cut the number of tires we need to have in stock."

Whether your fleet is large or small, you can make this test. Try a set of nylon cord tires and see how their remarkable resistance to bruising permits them to take hard body punches and safely support even your heaviest loads. See how they reduce road delays and carcass failure . . . give a lower cost per mile. Ask your dealer about nylon cord tires today. (Du Pont makes nylon fibers, does not produce tires. A number of rubber companies have nylon cord tires available.)

• • •

***FREE BOOKLET** on nylon tires—write for your copy. Textile Fibers Dept., Room 2520-J-9, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.*

NYLON CORDS PROTECT AGAINST ALL THESE CAUSES OF TIRE FAILURE

HEAT—Nylon cords can withstand hotter temperatures than a tire will ever encounter on the highway in normal operations.

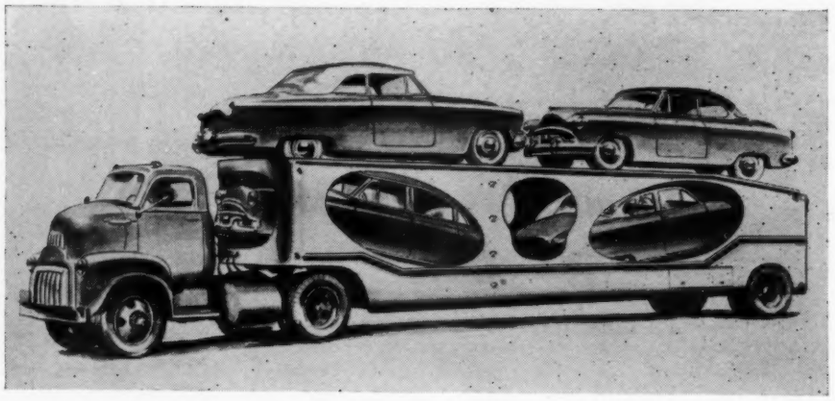
FLEX FATIGUE—Nylon's resilient strength makes tire cord stand up under the complex compression-tension flexing that takes place every time a tire turns—reduces flex-fatigue failure.

BRUISE DAMAGE—Nylon's toughness virtually ends cord ruptures caused by tires hitting curbs and holes at high speeds.

MOISTURE—Nylon minimizes tire failures caused by moisture seeping into cuts. Nylon's "water resistance" is one of the reasons it's so popular for fishing lines and commercial fishing nets.

DU PONT REG. U.S. PAT. OFF. **NYLON** for **TIRE CORD**

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



Fruehauf Designs 35-ft Auto Haulaway

A NUMBER of interesting features have been included in the design of the new haulaway trailer with which Fruehauf Trailer Co., Detroit, is re-entering the field. It incorporates an exclusive, inside lower deck design to give the driver complete freedom to open or close vehicle front doors from either side during loading and unloading.

Its actual overall length, including the rear bumpers, does not exceed 35 feet.

Shown above is the designer's conception of the unit which is very close to what the final vehicle will offer in the way of appearance. Production on the new unit is expected to begin next month.

Details incorporated in this unit include:

1. Completely enclosed inside location for tie-down ratchets on both sides of the lower deck.

2. Access to the upper deck has been provided by means of four hinged, fold-away step-ons on both sides of the trailers.

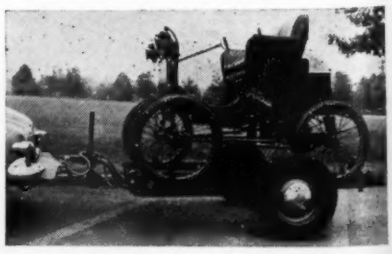
3. Tracks on the upper deck are so designed that it is impossible for cars to be driven off except during loading and unloading operations.

4. Two, safety-first, step-on platforms on either side of the upper deck permit a driver to get out of, or into, the first vehicle with no personal risk.

5. Location of the spare tire and wheel is under the right track on the curb side. The compartment for this tire is accessible for easy removal or storage through a piano-hinged opening.

6. Loading and unloading ramps are light, tough gage aluminum easily handled.

They're Made Bigger Now



Model No. 2 Autocar, built in 1898, was the first four-wheeler built by the company. It weighs about 1000 lb. It rests here on a specially designed trailer used for long hauls that its younger grandsons take as a matter of course.

Signals for Safety—

CLASS "A" DIRECTIONAL SIGNAL LAMPS

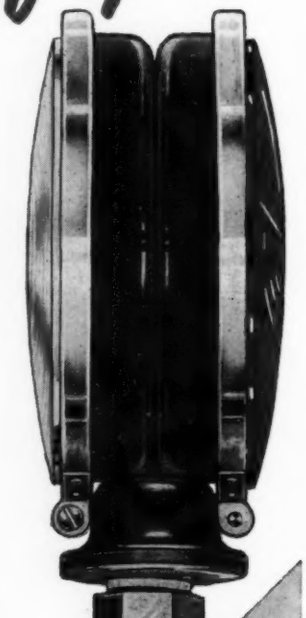
HEAVY DUTY

TRUK Grote LINE FOR ECONOMY

These heavy duty directional signal lamps are designed for safety and greatest economy of operation on commercial vehicles. Grote 400 Series lamps are newer — brighter — stronger — built to meet your needs as a truck operator. Heavy gauge rust-proofed steel body — stainless steel door — Plexiglass lenses: these are features that make the Grote 400 Series Class "A" Directional Signal Lamps your best buy for safety and economy.

Available in 18 set combinations with manual or self-cancelling switches.

Ask for Grote Lamps at your jobbers. Write for catalog.



No. 404 Double lens. Amber or red. Single bulb.

No. 401 Single lens. Pedestal mount.

No. 402 Semi-flush. Stud mount.

No. 403 Flush mounting.

THE Grote MFG. CO., INC.

Grote Square, Bellevue, Ky. Opposite Cincinnati

Here's the lowest priced, most powerful tractor

rated to haul 48,000 lbs. G.C.W. with a 35-ft. semi!

Meet the snub-nose Champ of the tractors . . . Ford's mighty new 116-inch wheelbase C-800 BIG JOB.

Its "close-coupled" chassis-cab snakes trailers in and out of tight spots quick as a wink. And of course the short wheelbase handles a 35-ft. semi-trailer within legal limitations.

Payload? Pile it on! The C-800 can take it and haul it like no other truck in its performance category. You get more horsepower, more torque from the high compression, LOW-FRICTION 155-h.p. Cargo King V-8 with overhead valves. You get up to 3,000 lbs. *more* G.C.W. The frame is deeper, of double channel design, for greater strength.

Your drivers get a break, too, with the super comfort and convenience of Ford's new DRIVERIZED cab designed throughout to make truck driving easier, safer, more efficient. 5-speed *Synchro-Silent* transmission is another Ford "extra" that's standard equipment at no extra cost.

It's worth more—no doubt about it—yet Ford's mass-production techniques give you the C-800 at lower first cost than any other truck in its performance class.

Step into the world's most comfortable truck cab! It's new, it's DRIVERIZED—and only Ford has it! New full width cab seat, new, curved one-piece windshield are but two of the features that cut driver fatigue . . . make it a real treat for a working guy!

FORD

ECONOMY

TRUCKS

SAVE TIME! SAVE MONEY! LAST LONGER!

Maintenance is a lead-pipe cinch on the new Ford Cab Forwards. Engine has been moved over a foot forward. Almost all engine service can be handled from the front end. Demountable brake drums, removable axle shafts and many other features speed a mechanic's work.

FREE! MAIL THIS COUPON NOW!

FORD Division of FORD MOTOR COMPANY
P.O. Box 658, Dearborn, Michigan

Please send me without charge or obligation, complete details on new Ford *Economy* Trucks for '53!

FULL LINE ☐ HEAVY-DUTY MODELS ☐
LIGHT MODELS ☐ PARCEL DELIVERY ☐
BIG JOB MODELS ☐ CAB FORWARD MODELS ☐

Name_____
(PLEASE PRINT PLAINLY)

Address_____

City_____ State_____

T-1 Check here if student ☐

September Roundup

Continued from Page 62

of pick-up and delivery services, inequity of long haul and local truck license fees, state gas taxes and urban street improvement, traffic congestion and night time delivery cost records, and converting private carriers to steady accounts. Interesting discussion at the meeting will center around the question, "What changes in truck construction would reduce cost of operation—or—provide for greater efficiency in local service?"

Nambo Meeting

National Assn. of Motor Bus Operators will hold its meeting in San Francisco. Highlights of the program include speakers on federal-state relationships, analysis of the news, transportation of mail by bus, PAR-Project Adequate Roads, highway safety and traffic congestion, employee training aids and employment conditions.

1953 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	47,234	19,101	3,669	12,622	3,344	8,271	3,638	97,879
February	40,616	16,600	3,087	11,068	3,409	7,621	3,811	86,212
March	55,910	22,798	5,588	19,354	4,776	9,057	4,550	122,043
April	51,743	23,352	5,078	17,700	4,287	8,200	4,427	114,787
May	39,635	14,428	2,729	10,788	3,982	7,481	3,390	82,433
June	31,516	10,148	1,575	7,700	3,567	7,687	3,870	66,063
Six Months—1953	266,654	106,427	21,726	79,232	23,365	48,327	23,686	568,417
Six Months—1952	211,333	108,432	28,891	100,087	21,984	52,598	24,014	547,319

* Automobile Manufacturers Association.

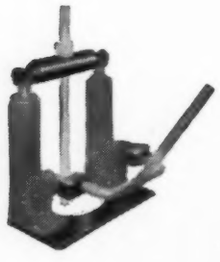
AGAIN- National GARAGE TOOLS LEADS THE FIELD

PULL or REPLACE CYLINDER SLEEVES with the NEW National GARAGE TOOLS HYDRAULIC PULLER

One man, working from the top of the block only, can pull or replace a set of cylinder sleeves in 15 minutes without hard labor. Two hydraulic jacks, pumped by one handle exerts a smooth, even pressure that quickly breaks loose or inserts the stubbornest sleeve. Sleeve capacity, 3 inches I.D. to 4¾ inches O.D. Adaptable to many other pulling and pressing jobs. Write for details today —the new patented National Hydraulic Puller gives you convenience, speed and rugged, guaranteed construction at an amazingly low cost.

Now Available . . .
Expansion Kit for
National No. 7145 and
Hein-Warner Model HP33
HYDRAULIC SLEEVE PULLERS

With this kit you can pull and replace cylinder sleeves up to 5¾" I.D. on either your National or Hein-Warner hydraulic puller. Kit consists of a wider base plate, longer bridge bar and two U-bar adapting blocks. Sleeve Adaptors from 4⅝" to 5¾" I.D. are available for use with the kit.



TOUGH TOOLS FOR TOUGH JOBS
NATIONAL MACHINE AND TOOL CO., INC.
JACKSON, MICHIGAN
U. S. A.

New Chairman

Senator John W. Bricker has been named as chairman of the Senate Interstate and Foreign Commerce Committee. He succeeds Senator Charles W. Tobey who died recently.

ICC Commissioner

Kenneth H. Tuggle has been approved as a member of the Interstate Commerce Commission. He replaces Walter M. W. Splawn, recently retired.

1953 Truck Trailer Shipments*

	June	Six Months
Vans		
Insulated and Refrigerated		
Steel	88	480
Aluminum	294	1,714
Furniture		
Steel	94	{779
Aluminum	10	
All other closed-top vans		
Steel	866	5,870
Aluminum	1,057	6,002
Open-top		
Steel	114	903
Aluminum	155	1,134
Total—Vans	2,678	16,862
Tanks		
Petroleum	311	1,996
Food	36	188
L. P. G.	10	65
All other	21	192
Total—Tanks	378	2,441
Pole, Pipe and Logging		
Single Axle	33	306
Tandem Axle	111	621
Total	144	927
Platforms		
Racks, livestock and stake	398	3,520
Grain bodies	72	583
Flats, all types	822	5,156
Total—Platform	1,292	9,259
Low-bed haulers	454	2,225
Dump trailers	99	579
All other trailers	4,122	10,031
Total—Complete Trailers	9,167	42,324
Converter dollies	56	953
Chassis only	357	1,838
Total—Trailers and Chassis	9,580	45,115

* Industry Division, Bureau of the Census.

Safety Regulations

The ICC has announced changes in its safety regulations that (1) permit use of wood charcoal cargo heaters, (2) permit use of amber vehicle warning lights, (3) include osteopaths among those qualified to make and cer-

(TURN TO PAGE 226, PLEASE)

ANNOUNCES:

Developed to Give at Low Initial Cost

premium tire performance at a very moderate initial investment. Tires made with "Super Cordura" are the practical answer to fleet operators' demands for better rayon tires at a moderate cost.

Ask your dealer about tires made with Du Pont "Super Cordura". Make plans in your replacement program *now* to take advantage of new economies when tires of "Super Cordura" become generally available.

E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

DU PONT *"Super Cordura"*

HIGH TENACITY RAYON

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... *THROUGH CHEMISTRY*

YOU CAN ALWAYS SEE A

CATS EYE

MARKER LIGHTS

No. A-7875

STOP LIGHTS

No. 100

DIRECTIONAL SIGNALS

No. 700

Warning Lights
Reflectors
Back up Lights
Tractor Lights
Fog Lights
Dome Lights
Ventilators
Grills

See Us at the TBEA
Exhibit Booth No. 1
Sheraton-Gibson Hotel
September 21-22-23

COLUMBUS METAL PRODUCTS, INC.
COLUMBUS, OHIO

September Roundup

Continued from Page 192

tify driver physical examinations, and (4) alter brake requirements on vehicles having at least two steerable axles. Details can be obtained from ICC Bureau of Motor Carriers.

Maintenance Meeting

The Assn. of Fleet Maintenance Supervisors will begin its fifth year with its first meeting of the 1953-54 season scheduled for Sept. 9 in Cambridge, Mass. Carter Wells, Flint Corp., Milwaukee, Wis., will speak on, "Engine Economy through Control of Manifold Pressure."

Tax Surcharge Killed

ICC has held surcharges levied by interstate motor carriers to off-set the New York ton-mile tax to be unjust and unreasonable, gave fleetmen until the fourth of this month to cancel them. Said the ICC: the tax should be treated as any other normal operating expense and reflected in regular rates rather than in surcharges.

New Committee

U. S. Chamber of Commerce has just appointed a 45-member, Transportation and Communication committee to work for clarification of federal-state relations, elimination of government competition and reduced regulation. Trucking industry members include Walter F. Carey, Evans A. Nash, Alex K. Scherer, John Sloan Smith and William W. Ward. R. A. L. Bogan will represent buses.

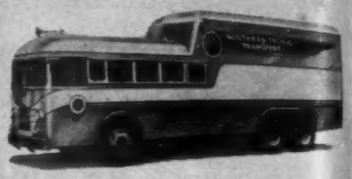
GM Buys Euclid

General Motors Corp. has acquired all assets of Euclid Road Machinery Co., Cleveland, through a direct exchange of stock. GM has been eyeing the off-road equipment field for a long time in order to extend its present truck line.

Trailer Uniformity

A six-year effort to unify the West on permissible semitrailer lengths ended last week when Governor Warren signed AB 1578. With the adoption of this legislation in California, the only remaining state in the West not in compliance is Oregon. However, the Oregon Highway Commission has full powers to approve the operation of 40-foot equipment on designated routes, and Robert Knipe, OMTA manager, has received definite assurances that Commission permission opening opening up certain main interstate

(TURN TO PAGE 228, PLEASE)



"THIS LUBRICANT CUT OUR PARTS REPLACEMENT 50%"

—says THE NORTHERN PACIFIC TRANSPORT CO.

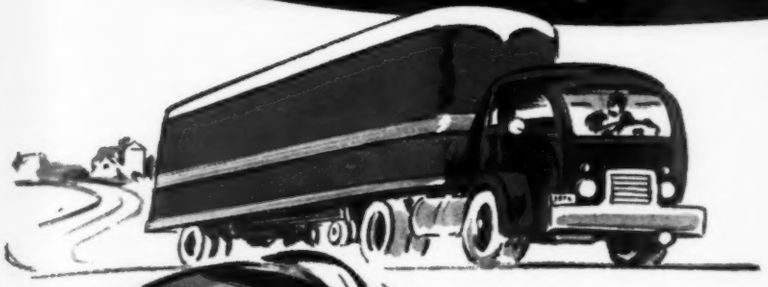
"The use of LUBRIPLATE in the worm-gear, hypoid and two speed axles has enabled us to change our oil-change period from 15,000 miles to 40,000 and sometimes more. Our overhaul periods are stretched from 50,000 to 100,000 miles and repair parts bill cut 50%."

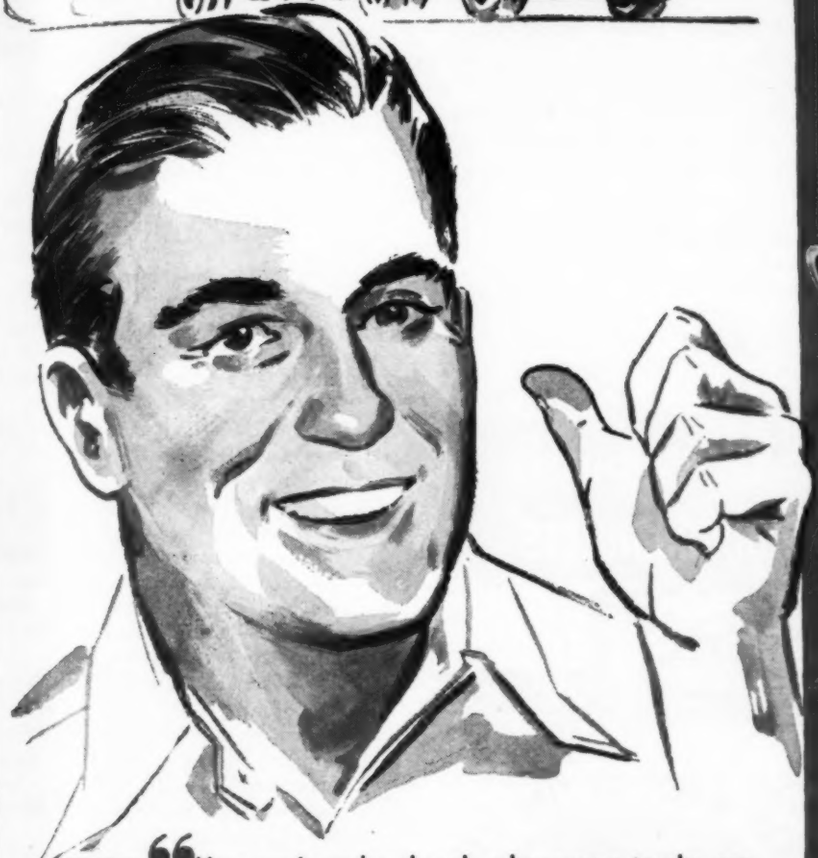
For nearest LUBRIPLATE distributor, see Classified Telephone Directory. Send for free 56-page "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

"We get more time on the road and a bigger profit per truck"

(THANKS TO McQUAY-NORRIS)





McQUAY-NORRIS COMPLETE LINE SERVICE

TIME TESTED M.QUAY NORRIS AUTO PARTS PROVEN IN SERVICE

"You can't make dough when your trucks are in the shop for repairs. Our records prove that. When you've got to keep 'em rollin' to make a profit you can't beat McQuay-Norris parts."

McQUAY-NORRIS MANUFACTURING COMPANY • ST. LOUIS 10, MO.

INVEST IN

EASIER INSPECTION

...Faster Maintenance Work

Clean your engines and chassis with Magnusol. It's a fast, thorough operation, using unskilled labor, and costing you, for labor and materials, less than $1 per vehicle. You'll save that dollar many times over in better use of high-priced inspection and maintenance manpower.

Magnusol is a concentrate, used mixed one part to eight of kerosene or safety solvent. You spray this solution *at room temperature* over engine and chassis surfaces. After a short soak-in period you rinse off with a pressure stream of water (also at room temperature), leaving bright, thoroughly cleaned surfaces. The whole operation takes about ½ hour per vehicle.

PROVE IT FOR YOURSELF!

Order 15 gallons of Magnusol and the Magnus Sprayer. If you are not satisfied with the results you get, after a 30-day trial, we'll gladly credit you with the full amount of your bill on the return of the unused Magnusol and the Sprayer.

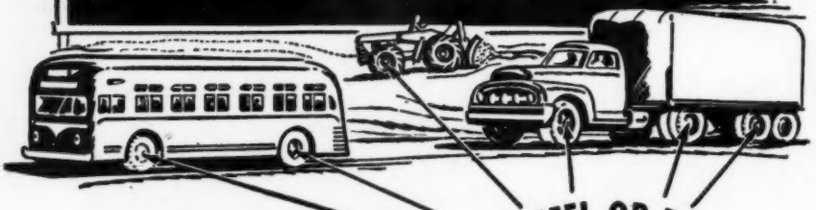
SAFE Right Down the Line!

Magnusol is completely harmless to all metals and paint. It's safe for human skin, and has no unpleasant fumes. Above all, it's safe from the fire hazard point of view, for the cleaning solution is non-flammable.

magnus

MAGNUS CHEMICAL CO., INC.
38 South Ave., Garwood, N. J.
In Canada: Magnus Chemicals, Ltd., Montreal
Service Representatives in Principal Cities

Get True Mileage Records with PE-KA Driveless Hubodometers



ANY WHEEL OR TIRE SIZE

Pe-Ka Driveless Hubodometer gives you actual mileage traveled by rented, leased or exchanged rolling stock, and for State and ICC ton-mile regulations.

★

Completely sealed. Tamperproof. Oilless bronze bearings assure long life.

★

Installed in a few minutes on rear or front wheels. Send for details.

ENGLER INSTRUMENT CO., 252 Culver Avenue, Jersey City, N. J.

September Roundup

Continued from Page 226

routes to 40-foot equipment will be granted at once. With Oregon and California in line, it will now be possible to operate 40-foot semitrailers in all of the 11 Western states and Alaska.

Safety Awards

Fleets awarding their outstanding safe drivers recently included:

Elmer C. Breuer Co., Cleveland, Ohio—to 81 drivers with accident-free records of from one to five years.

Herr's Motor Express, Quarryville, Pa.—to 17 drivers at the company's annual safety banquet.

Charlton Bros. Transportation, Inc., Hagerstown, Md.—to 32 drivers with a year or more of accident-free driving each.

Dan Dugan Oil Transport Co., Sioux Falls, S. D.—to 66 drivers at a banquet at which South Dakota Governor Sigurd Anderson spoke.

Knaus Truck Lines, Inc., Kansas City, Mo.—to 41 over-the-road drivers with awards including diamond rings, watches and gold pins.

Leaman Transportation Corp. and Chemical Tank Lines, Inc., Downingtown, Pa.—to 153 drivers, 12 of the group having safe driving records of seven years or more.

Eastern Motor Express, Inc., Terre Haute, Ind.—to 23 drivers from the Indianapolis terminal.

Watson Bros. Transportation Co., Inc., Omaha, Nebr.—to 27 drivers, 17 of which had records of over 1,000,000 miles each of accident free driving.

Hughes Transportation, Inc., Richmond, Ky.—to eight drivers from the company's Richmond terminal.

Tamiami Trail Tours, Inc., Tampa, Fla.—to four drivers, each with 10 years or more of accident-free driving.

Carolina Freight Carriers, Corp., Cherryville, N. C.—to 187 drivers with a total of 788 years and 66,980,000 miles of accident-free driving.

Decatur Cartage Co., Chicago—to 104 drivers with accident-free records ranging from one to 14 years.

Dixie Ohio Express Co., Akron, Ohio—to 210 drivers, of which all but 67 have individual records of two years or more of safe driving.

American Oil Co., Baltimore, Md.—to one driver with a 30-year no-accident record in city driving.

System Tank Lines, Inc., Portland, Ore.—to 21 drivers, one with a record of 24 years and over 2,000,000 miles without an accident.

Sanders Motor Freight, Oakland, Md.,—to seven drivers, two of which

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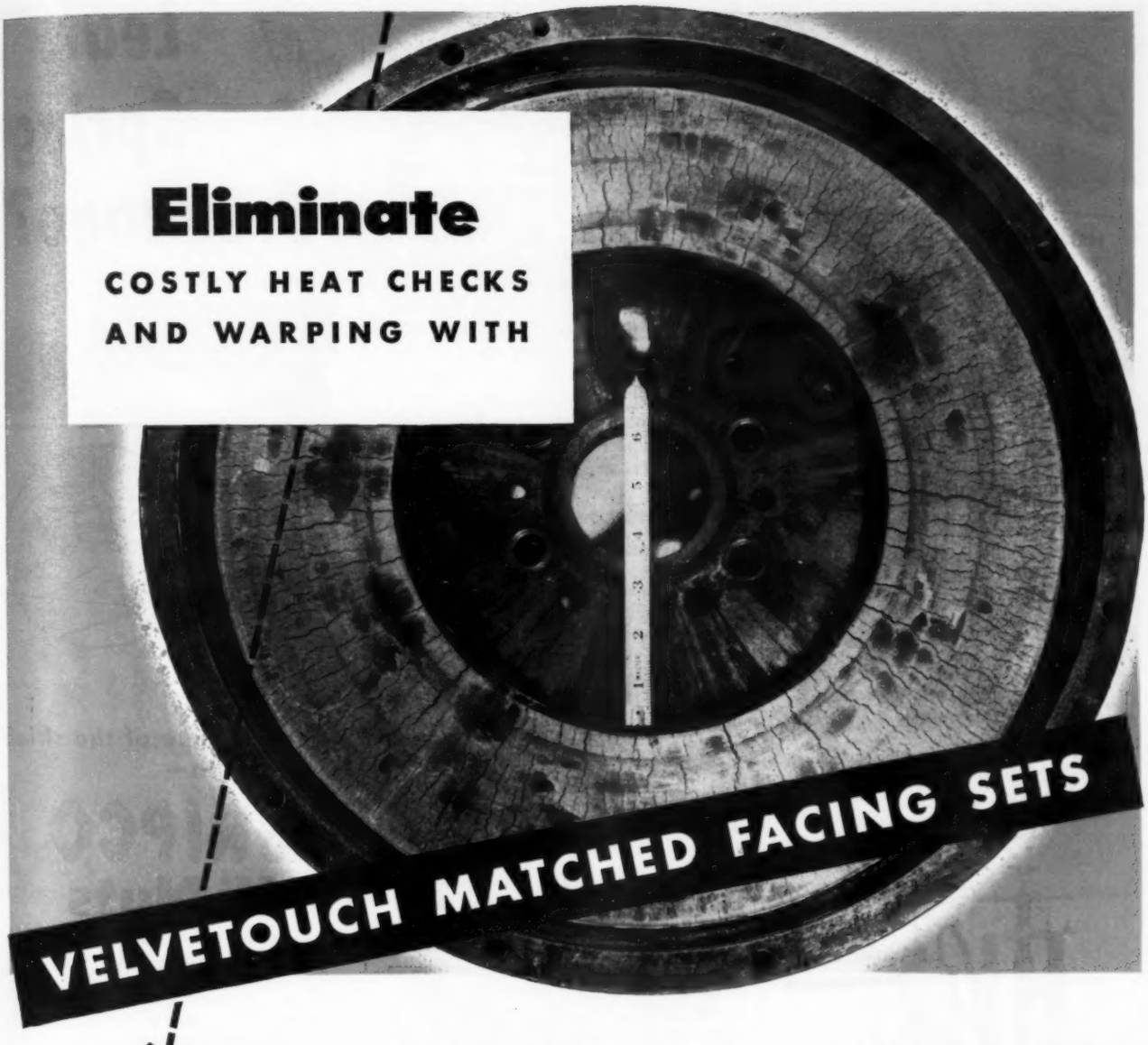


Eliminate

COSTLY HEAT CHECKS AND WARPING WITH

VELVETOUCH MATCHED FACING SETS

Velvetouch

THE S. K. WELLMAN CO.

200 Egbert Rd • Bedford, Ohio

Badly warped and heat checked flywheels and pressure plates are *expensive* to replace. But you can completely eliminate this loss with Velvetouch Matched Facing Sets! Because—

Velvetouch Sets give you *four* friction material surfaces instead of two. They're designed primarily for *extra* heavy duty use. You get greater clutch capacity, plus positive assurance against frequent replacements resulting from overloading and driver abuse. In addition, Velvetouch enables you to reclaim damaged flywheels and plates for additional savings!

Detailed literature available now! For further facts, see your jobber, call our nearest branch, or write us direct.

THE S. K. WELLMAN CO. SALES OFFICES AND WAREHOUSES

* ATLANTA—119 14th St., N. E., Atlanta 5, Georgia

** DETROIT — 16822 James Cauzens Highway, Detroit 21, Mich.

* SAN FRANCISCO—424 Bryant Street, San Francisco 7, Calif.

* CHICAGO—1500 South Western Ave., Chicago 8, Illinois

* LOS ANGELES—1110 South Hope St., Los Angeles 15, Cal.

* TORONTO, ONTARIO — The S. K. Wellman Co. of Canada, Ltd., 2930 Dufferin St.

* CLEVELAND—200 Egbert Rd., Bedford, Ohio

* PHILADELPHIA—1545 West Bellfield Ave., Philadelphia 41, Pa.

* DALLAS — 3407 Main Street, Dallas 1, Texas

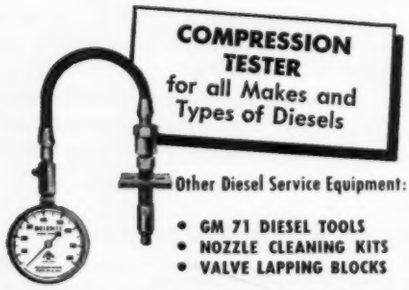
* PORTLAND—636 N. W. 18th Ave., Portland 9, Oregon

** WASHINGTON—1101 Vermont Ave., N. W., Washington 5, D. C.

** EXPORT DEPARTMENT—8 South Michigan Ave., Chicago 3, Illinois

* SALES OFFICE AND WAREHOUSE ** SALES OFFICE

Diesel SERVICE EQUIPMENT



Other Diesel Service Equipment:

- GM 71 DIESEL TOOLS
- NOZZLE CLEANING KITS
- VALVE LAPPING BLOCKS

BACHARACH INDUSTRIAL INSTRUMENT CO.
7301 Penn Avenue • Pittsburgh 8, Penna.

Send complete information on your Diesel Testers and Service Tools

Name .....

Company .....

Address .....

.....

September Roundup

Continued from Page 228

received $50 bonds for their outstanding record.

Express Freight Lines, Inc., South Bend, Ind.—to 58 drivers at a safety luncheon.

Best Motor Lines, Dallas, Texas—to 78 drivers with records of one or more years of accident free driving.

Pilot Freight Carriers, Inc., Winston-Salem, N. C.—to 63 drivers with records of from one to seven years of accident free driving.

Industrial Transport, Inc., Detroit and Pontiac, Mich.—to 33 drivers whose combined accident free record was 58 years and 2,851,000 miles.

New State Laws

California: H 2637—permitting buses with 3 axles and outside turning radius not more than 45 ft a length of 40 ft. H 3511—requiring headlights be dimmed when approaching within 200 ft of another vehicle. H 1578—permitting a semi-trailer length of 40 ft providing semi-trailers over 35 ft shall not exceed 32 ft from center of turning axis to center of rearmost axle and no part of body or load shall project forward more than 60 in. from turning axis. H 3327—deleting proposed registration fee increases; providing for quarterly payment of registration fees by commercial vehicles at ½ regular rate plus $2.

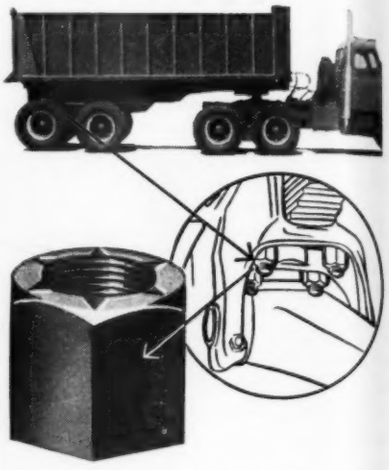
Connecticut: H 1447—exempting construction trucks and trailers from size and weight regulations; providing weight regulations for such vehicles as follows: 4-wheeled vehicles—40,000 lb, 3-axle vehicles—50,000 lb, 4 or more axle combinations—60,000 lb. H 1761—providing that vehicle lights shown to front shall be white, yellow or amber; rear lights shall be red, yellow, amber or white. Interstate commercial vehicles may display green identification lights.

Delaware: H 447—increasing commercial vehicle registration fees, including diesels, to $1.90 per 500 lb of gross weight up to 5000 lb, and to $2.50 per 500 lb of gross weight over 5000 lb.

Illinois: H 655—imposing a 2 per cent tax on 98 per cent of price of motor vehicles purchased for use in the state. H 563—requiring vehicles constructed so distance from center top of steering post to left outside limit of body, cab or load exceeds 24 in. or it is more than 14 ft to rear limit of body or load be equipped with turn signals. H 791—permitting maximum gross weight on five or more axle tractor and tandem semi-trailer combination of 68,000 lb, limiting tandem axle weight to 30,000 lb. H 208—requiring vehicles registered after Jan. 1, 1955, be equipped with turn signals. S 94—authorizing use of yellow or amber lights visible for 500 ft on front of trucks or buses;

(TURN TO PAGE 232, PLEASE)

Leaf Spring Breakage?



Eliminate one of the chief causes with—

GRIPCO Hi Nuts

In the usual nut-and-washer fastening for U-Bolts on leaf springs, this is what often happens. The washer breaks and falls out, permitting spring-leaf "play" that causes breakage of the leaves when the truck gets severe jolting. Avoid this trouble by using Gripco Hi-Nuts, and get these advantages:

There is no washer to break and get lost, causing resulting difficulties. Also cost of washers is saved.

Gripco Hi-Nuts lock onto the bolt with a positive engagement of the nut and bolt threads through the entire length of thickness.

Gripco Hi-Nuts will not rust on to the bolt. They can be removed at any time with a wrench, and re-used repeatedly.

Superiority of Gripco Hi-Nuts is proven in highly successful use by leading truck and trailer manufacturers, fleet operators, repair shops, etc. and in severe heavy duty applications such as on northwest woods log trailers.

Samples and prices supplied on request.

GRIPCO

Also Makers of
LOCK NUTS
"CLINCH" NUTS
WELD NUTS

334

GRIP NUT COMPANY
315-C So. Michigan Ave., Chicago 4, Ill.

"125,000 miles— no trace of wear." Good reason for a change to CLEVITE* 77

THERE is a great difference in the performance of engine bearings. This directly affects the cost of operating trucks, busses and passenger cars. A West Coast maintenance expert who services heavy duty trucks for independent operators discovered this fact and uses it to his customers' benefit.

On a routine engine inspection after 125,000 miles of heavy-duty operation, he removed a set of rod and main bearings that showed no trace of wear. This was so unusual that he examined them closely. They were our Clevite 77 bearings.

Now he standardizes on Monmouth* bearings; either Micro*, regular Copper-Lead or Clevite 77 whichever is specified by the engine maker. As a result, his customers are getting longer service between replacements and avoiding delays on the road due to bearing failure.

You can depend on the original equipment design, construction and precision of these bearings. They are sold for replacement under our Monmouth brand and distributed from coast to coast by N.A.P.A. jobbers. Isn't it time for you, too, to make a change to these proven, superior Monmouth bearings?

Your NAPA Jobber is a Good Man to Know!

NAPA Assurance of Quality

*The words Monmouth, Clevite and Micro are registered trade marks of Clevite Corporation.

Monmouth

ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

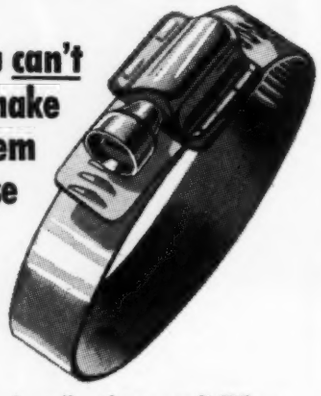
Supplied through Clevite Service, Inc. Made by The Cleveland Graphite Bronze Co.
Units of Clevite Corporation, Cleveland, Ohio.

HOLD TIGHT

to the end.....

"Aero-Seal"
HOSE CLAMPS

you can't shake them loose



They're vibration-proof! When the precision worm gear is turned, the clamp tightens with smooth, sure, uniform pressure all around the hose. No pinching, no damage, no leaky hose. AERO-SEALS won't come loose and pop open in that annoying way so many hose clamps have. Yet they are easily removed for use again and again. Installed with one hand — thumb clamp or screwdriver slot types.

Distributors who feature the assortments, sell AERO-SEALS faster!

BREEZE CORPORATIONS, INC.
41 South Sixth Street, Newark 7, N. J.

September Roundup

Continued from Page 230

eliminating present requirement for green lights on top vehicles.

Massachusetts: H 2652—providing for excise taxes in place of local taxes on registered vehicles and trailers. S 711—providing for establishment of highway safety committee and a plan for requiring insurance for operation of vehicles.

Ohio: H 563—increasing diesel fuel tax to 5¢ per gal. H 588—imposing a 15 mill gross receipts tax on for-hire carriers and on transportation cost of private carriers. H 619—imposing an axle mile tax, effective Oct. 1, 1953, ranging from ½¢ per mile for commercial vehicles with 3 or more axles to 2½¢ per mile for each commercial vehicle with five or more axles; increasing gasoline tax 1¢ per gal. H 24—re-enacting mudguard requirements and doubling overweight penalties. H 686 requiring turn signals on vehicles sold after Jan. 1, 1954. S 288—requiring vehicles constructed so distance from center top of steering post to outside limit of body, cab or load exceeds 24 in., or when exceeding 14 ft to rear of body or load be equipped with turn signals effective Oct. 2, 1953.

Oklahoma: H 765—granting authority to State Highway Commission to establish prima facie speed limits.

New Jersey: H 474—requiring vehicles made after July 1, 1954, be equipped with two stop lamps and two rear lamps.

Pennsylvania: H 1021—eliminating requirement of toilet facilities in 3-axle buses permitted a length of 40 ft.; restricting 2-axle buses to 30,000 lb GVW

(TURN TO PAGE 234, PLEASE)

Classified Advertisements

SITUATION WANTED BY MAINTENANCE SUPERVISOR. CAN YOU USE THIS MAN'S EXPERIENCE? 18 Years Fleet Maintenance; 15 Years Administrative; Proven Executive Ability. Education—Graduate Automotive Engineer. Personal—Age 39; Married; 3 Children; References. Have made a study of the motor transportation and maintenance problems for the operation of light and heavy duty gas and diesel equipment. Responsible for planning, developing, testing and installing preventive maintenance programs; initiate and administer mechanic and apprentice shop training; evaluate maintenance methods, failure analysis, vehicle specifications; inventory control, tire cost per mile records; inspection procedure; unit cost systems; budget control; purchasing; estimating and labor negotiations. I have an enviable safety record and excellent record with good personnel relations. Present remuneration $10,000 annually. Box 13, Commercial Car Journal, 5601 Chestnut St., Philadelphia 39, Pa.

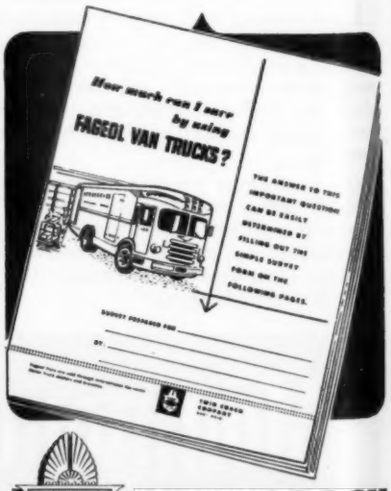
Service Manager Wanted. A rapidly expanding national manufacturer in the trucking industry has opportunity for several service managers. Openings in the Southwest, Central, South and East—ability to relocate is necessary. Experience in truck or trailer work is desirable but not essential. Good salary with profit participation open to successful applicants. Please send a complete résumé of your experience and a recent photo or snapshot. Box 12, Commercial Car Journal, 5601 Chestnut Street, Philadelphia 39, Pa.

Ask your International Harvester motor truck salesman to tell you the FAGEOL VAN PROFIT FACTS!

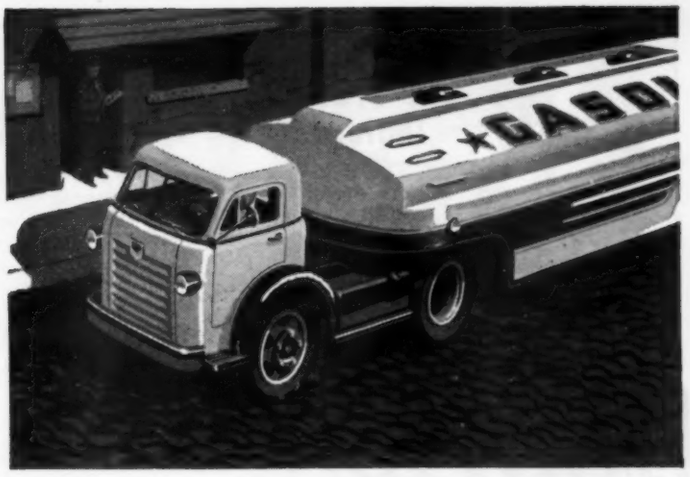
Would you like to make $2500 more profit per truck per year because of increased payload capacity?

Are you interested in reducing maintenance costs by $318.75? In cutting annual registration fees by $137.50? Is a 15% increase in daily deliveries worth investigating?

If your answer is "Yes", ask to see the new Fageol Van Truck Survey now being offered by International dealers and branches. A-8090



TWIN COACH COMPANY
Kent, Ohio

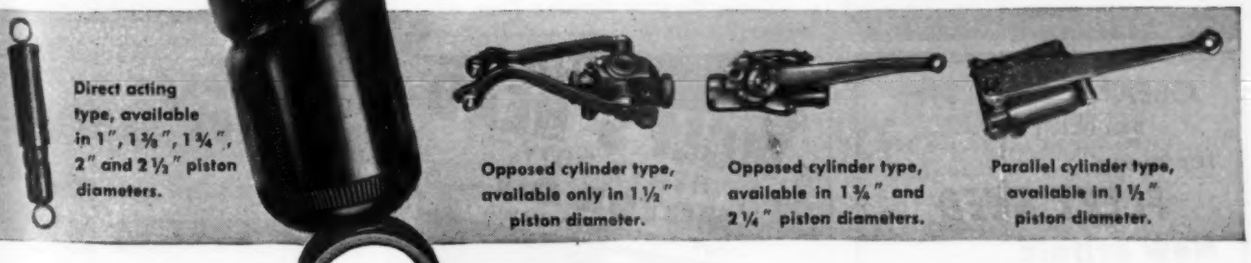


a smoother ride over any road with any load!

Delco Heavy-Duty Shock Absorbers

Equip your vehicles with Delco Heavy-Duty shock absorbers to smooth out the roughest runs. Delco shocks cushion the load by absorbing jars and jolts. Exclusive design and engineering features provide balanced ride control plus outstanding performance. Proof of Delco superiority is found in the fact that more vehicles in America are equipped with Delco than with any other make. Replace with Delco Heavy-Duty shock absorbers. . . . Available everywhere through United Motors Distributors.

LOOK!
DELCO
can supply
all your shock
absorber needs



Direct acting type, available in 1", 1⅜", 1¾", 2" and 2⅓" piston diameters.

Opposed cylinder type, available only in 1½" piston diameter.

Opposed cylinder type, available in 1¾" and 2¼" piston diameters.

Parallel cylinder type, available in 1½" piston diameter.

DELCO PRODUCTS
Division of General Motors Corporation • Dayton, Ohio

Low Air Pressure Indicator

WIG-WAG FOR AIR BRAKES

The Wig-Wag mounts above the windshield, on driver's side. In horizontal position until warning is needed—the Wig-Wag instantly swings into driver's field of vision whenever air pressure drops below point required for safe air brake operation.

Visible from both inside and outside the vehicle when air pressure is low.
No electrical connections.
No radio interference.
No upkeep expense.
Complies with I.C.C. S 193.51.

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Series 71
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Hercules – Buda
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"Caterpillar"

Price list on request

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INTERNATIONAL CORPORATION
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KINNEAR Rolling Doors

Ideal for loading docks, trucks, or any doorway. They travel straight up and down; coil out of the way; make all floor and wall space around doors fully usable all of the time; give all-metal protection against fire, wind, theft. Built in any size. Motor or manual operation. Write.

The KINNEAR Mfg. Co.
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Saving Ways in Doorways

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Both "V" TYPE and ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS

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BETTER FIT . . .
for every
FLEET NEED
New Britain
HAND TOOLS
THE NEW BRITAIN MACHINE CO.
NEW BRITAIN, CONN.

September Roundup

Continued from Page 232

and 3-axle buses to 40,000 lb GVW; making it unlawful to load buses by more than 125 per cent of registered seating capacity. H 900—requiring buses and trucks on which gross receipts tax has been paid to have pasted on windshield sticker showing payment of tax obtainable from Dept. of Revenue. S 527—providing for licenses and regulations for transportation, packaging and delivery of explosives. H 883—prohibiting use of green lights on front of motor vehicles.

Vermont: H 289—making owner or lessee liable for overweight penalties.

Wisconsin: S 47—increasing proof of financial responsibility to #10/20/5000. H 421—increasing length of combinations to 50 ft. H 498—permitting operation of pick-up and delivery vehicles on Class B highways if axle weight does not exceed 16,500 lb. S 402—increases Public Service Commission filing fees to $40 for common carriers and to $25 for contract carriers. H 791—permitting contract carrier tractors upon which carrier permit fee has been paid to haul common carrier trailers in metropolitan areas of cities exceeding 500,000 population. H 499—decreasing overload penalties for first conviction. H 316—authorizing that two vehicles may be drawn when transported by drive-away method in saddle-mount combination. H 164—requiring all motor vehicles to have rear fenders or mud guards.

END

Please Resume Reading Page 64

WOLF'S HEAD
HEAVY DUTY
MOTOR OIL
100% PURE PENNSYLVANIA
Exceeds
EVERY REQUIREMENT FOR HEAVY DUTY OIL

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GENERATING SETS
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TRUCK COMPANY
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Willard

Plate-Anchored Batteries now give Double the Life

Where other brands "shook to pieces"...

United Truck Lines, Inc.
Certified · Insured · Bonded
SPOKANE PORTLAND SEATTLE
TO ALL POINTS IN WASHINGTON OREGON · IDAHO AND MONTANA
SPOKANE 11, WASHINGTON

April 17, 1953

Willard Storage Battery Co. of Calif.
5700 East Olympic Blvd.
Los Angeles 22, Calif.

Attention: Sales Manager

Inasmuch as we are at all times endeavoring to reduce operating costs to a minimum, I believe it will be of interest to you to know about the performance and success we are having with your TR-1-90 Willard tractor battery.

Mr. Tom Allison of Automotive Electric Company, your Willard distributor, has been aware of the short life of most batteries used on our refrigerator unit on our trucks and trailers due to the extreme vibration. This refrigerator unit is equipped with two group one batteries. We have in operation about 400 units and it was a real task to keep them operating dependably for the transportation of perishables as it seems all batteries would "shake to pieces" in this type service.

About three years ago Mr. Allison explained the features of this TR-1-90 battery and we immediately purchased same, and after this length of time I can, without a doubt, say they have lasted more than double the life of any other type group one we have ever used.

Sincerely,
L. F. Olney
L. F. Olney
Purchasing Agent

Rushing perishables to markets all over the vast Pacific Northwest, United Truck Lines, Inc., must keep the refrigeration unit on each of 400 trucks and trailers in good working order. But none of the conventional storage batteries used in pairs to power the vital refrigeration units could stand the extreme vibration long before shaking to pieces.

Now, after three years of experience, United knows it has the answer to its problem in Willard TR-1-90 Batteries. Mr. L. F. Olney, United's purchasing agent, reports in the letter reproduced at the left: ". . . they have lasted more than double the life of any other type group one we have tried." Made primarily for rough-and-tumble farm tractor service, the Willard TR-1-90 is finding increasing use on trucks where vibration causes ordinary batteries to die young. Its acid-proof, molded Plate Anchor literally locks plates in place—defies vibration. Its specially-designed rubber insulator lends extra support to the plates. Its improved sealing compound withstands vibration indefinitely. Its stronger, tougher container—reinforced at all points of stress—can take the most grueling punishment. And its Willard "Safety-Fill" Construction prevents acid spray and dangerous corrosion caused by over-filling.

No matter how unusual, or how "average" your conditions of operation may be . . . there is a battery among the many commercial types made by Willard that will give you outstanding service at lowest cost-per-mile. For a survey of your individual requirements by an experienced battery engineer, just write and let us know when we can call.

Through Service we Grow

WILLARD STORAGE BATTERY COMPANY

FACTORIES IN: CLEVELAND • LOS ANGELES • DALLAS • MEMPHIS • PORTLAND • ALLENTOWN • TORONTO

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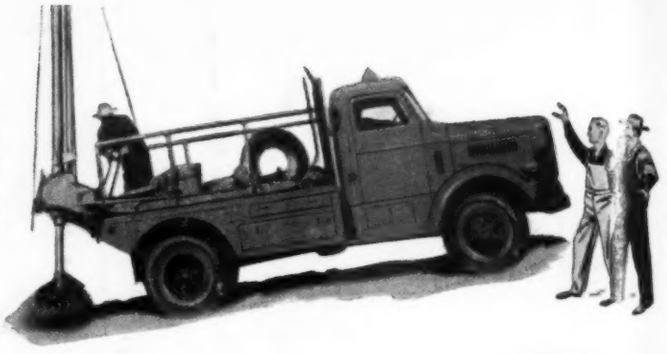
FWD "Mobilized Tools" are popular choice for utility line construction and maintenance. This preference is enhanced by the fact that FWD "Mobilized Tools" are designed with the help of utility men themselves.



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BUILDING AND MAINTAINING STREETS AND HIGHWAYS—FWD trucks play a vital role in extending and maintaining the nation's road network. Since 1918 they've been the favorite of state and local departments for hauling, construction and maintenance work, as well as for snow removal operations in winter months.

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